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The Pennsylvania School Journal

DEVOTED TO SCHOOL AND HOME

EDUCATION

E. E. Higbee, Editor.

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THE
SCHOOL JOURNAL
ORGAN OF THE DEPARTMENT OF COMMON SCHOOLS AND OF THE STATE TEACHERS' ASSOCIATION.

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EDUCATIONAL INTEREST OF THE COMMONWEALTH.

FIFTIETH ANNUAL REPORT OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION OF THE STATE OF PENNSYLVANIA.

To the Senate and House of Representatives of the Commonwealth of Pennsylvania:

GENTLEMEN: I have the honor to submit, in compliance with the requirements of law, the annual report of the Superintendent of Public Instruction for the year ending June 2, A. D. 1884, together with the annual report for the year ending June 4, A. D. 1883, which, although the Legislature was not in session, was made, placed in the hands of the Governor of the Commonwealth, and printed.

No worthier object can engage the attention of a State than the proper education of the children thereof. Even in governments where the arts of war formed the main study of the governing and the chief practice of the governed class, the worth of learning, of an advanced character at least, was reverently recognized. Cæsar pardoned Varro because he was the most learned man of his age, and made him librarian at Rome; and the warrior Karl, when the Frankish judges had condemned Warnefried, the Lombard scholar, to lose his eyes and hands, saved him, saying: "We shall not easily find another hand that can write history." But where, as now, the arts of peace come into special prominence, and where the very purpose of legislation is the highest welfare of the people, no State can neglect the general educational discipline of the young, without setting aside the foundation itself upon which its claim to legislate at all is based.

Of course, much elementary training is carried forward by the family, where father and mother are the divinely-ordained guides and guardians of their offspring; and that Commonwealth would be weak indeed, the cultured purity of whose home-life forms not its chief pillar of support. But the relation between home and the so-called common school is most intimate. The children go from one to the other and return day after day through years. The opening of school creates a kind of festival stir in every household, and, as the term goes on, the communion becomes so close that the new companionships and disciplinary restraints and study-tasks of the school-room move into the loving converse and freedom of the family life as a part of its experience, each adding effect to the other, as bird songs float into the morning's dewy calm and become part of the rising day.

An agency, therefore, so coöperant with the family life, taking character therefrom, and adding character thereto; an agency so capable of becoming a lasting blessing, as it should, or a blighting curse, as it may, throughout the thousands of homes which make up a State, clearly demands the most watchful care of those who make and execute

the laws, and should never be felt to be a subordinate interest or mere accident in our halls of legislation. If the fish in our rivers and the game in our forests, with the forests themselves, are of sufficient importance in our social life to command the protection of legislation; if the difficult problems growing out of the strained relations of capital and labor are of interest enough to demand the skill of our most thoughtful law-makers; if the methods of taxation and means of commercial intercourse and the treatment of paupers and the insane well deserve the calm consideration of our ablest statesmen, then, most certainly, the training of a whole generation of children, numbering in our State more than a million, affecting, as it must, our present social life, and reaching out into the future and conditioning the destiny of the Republic, deserves and demands the best thought and highest wisdom of the Legislature of an enlightened Commonwealth like ours.

Too often is it the case, we fear, that some of the most significant forces of our social order, because silent in their operation, insignificant in their outward show, and more spiritual than material in their results, escape consideration. Who will deny that the primary education of a whole generation of boys and girls is a significant factor of social progress? How far the possibilities with which it has to do, sweep beyond the vision which generally catches the eye of our business men and politicians, and how much deeper and broader are the responsibilities involved in the care of a million undeveloped minds than most of us are ready or willing to acknowledge! But so quietly does the whole work link itself to our homely every-day life, so modestly does it hide itself away from public notoriety to keep nearer to our hearth-stones, that it may almost entirely fail to find that recognition and attention which it ought.

Without hesitation, therefore, as opening the way for needed legislation, we direct your notice to the following suggestions, which are the result of a long and critical observation of the schools and school system of our State:

SCHOOL BUILDINGS AND GROUNDS.

We cannot expect that parents will send their children, either voluntarily or by compulsion, to our public schools, unless they feel assured that their physical health and manners, as well as their intellectual development, will be carefully guarded. It is important, that the contrast between home and the school in these respects be as small as possible. Some contrast there must be, growing out of the necessary distinction between the two; but there are many points where this necessary distinction has no force whatever. If parents seek to surround their homes with those silent protectors of the heart-life and manners of their children, in yards where smoothly-mown lawns, and shady walks, and fair-hued flowers catch the eye, and at once tend to subdue the wild and discordant impulses of youth; if with instinctive wisdom, they seize upon all the resources of art to deepen the charm of home associations, and break the sway of low, sensuous appetites, how much more do we need the same watchful provision for our schools, where the temptations to rudeness are multiplied, and where unclean habits are most easily contracted!

We must bear in mind that our schools are filled with *children*, not with *men* and *women*. As yet they have no formed habits of thought or self-control. No fixed character has yet been reached. Everything with them is in a plastic state. They stand only at the half-opened portals of life, but like insects they are

> Eager to taste the honeyed spring,
> And float amid the liquid noon.

By no means are they blanks, but filled with a thousand impulses, and any one of these impulses is likely to gain imperial sway over their whole lives. The wide possibilities of their future for good or evil are already stirring within them as blossoms at earliest spring already stir within their buds long before the blooming flush of summer. There is hardly anything in earth around, or in the air above, that is not entering into the study of their imagination. The State, therefore, cannot afford to allow the children who soon must characterize its whole social life to congregate in large crowds in places of resort called schools, where the buildings and grounds all speak of careless indifference as regards either health or manners, chilling their young life, and keeping all their buds from growing—where everything is in such broad contrast with all that can please the eye, or touch the heart, or elevate the soul, as even to draw out all the lower passions of our nature, and make them run riot in that braggart boldness and reckless rowdyism which defy all discipline or moral growth. Yet there are within the State some buildings used for school purposes, into which no law should require a well-mannered youth to enter, but rather compel him, if passing by, to look the other way. These are reported to

us by the county superintendents, who have, no doubt, in all earnestness urged the directors to change or remove them. But neither county nor State superintendent has any remedy in the case beyond the unpleasant duty of vain complaint. It is true, there is a process of removing directors by the judges, but this is rarely resorted to in such cases, and the removal and appointment of others even, would, in most cases, effect no remedy. We called attention to this matter more fully in our last report, but, as the Legislature was not in session, we suggested no remedial legislation. We are fully convinced, however, that much can be accomplished in this direction if the Legislature will make the inspection of our schools more definite and effective, so that we may not, from year to year, report simply in way of complaint, but have authority to act. The superintendent of city, or borough, or county, in inspecting the school-buildings within his jurisdiction, after having made known to the directors the unfit condition of any school-building for school purposes, should be authorized by law, in due time, to condemn the same, and call upon the judge of the court of quarter sessions to appoint a visitor, at the expense of the district, who shall thoroughly examine the building or buildings, and if he joins with the superintendent in condemning the same, their joint report should be forwarded to the State Superintendent, who shall be required, upon receipt of such report, to withhold the State appropriation to said district for that year, and thereafter until the cause or causes of complaint are removed.

This has reference only to school buildings *clearly unfit for school purposes*, where the judgment of superintendent and appointed visitor ought to be sufficient to warrant the prompt action required by such law. Already, if the directors fail to keep the schools in operation during five months under legally-qualified teachers, or if they presume to employ teachers not legally qualified, the State Superintendent is required to withhold from them the State appropriation. This law has been of great service. Why should not authority be given to do the same upon the report of two competent inspectors who condemn a school-building as unfit for either teacher or pupils? By beginning thus at our very worst and most disgraceful buildings, we may be able, gradually, to work out an improvement which will be felt far and wide throughout the State.

In former years, sufficient interest was taken in this matter to pass an act (see act approved May 8, 1855, section 45) and appropriate funds sufficient to secure a carefully-prepared work on school architecture for the information and use of the school directors of the State. This work, as said in our previous report, is now out of print and out of date. We have already asked the Legislature for a renewal of the act, and for a sufficient appropriation to secure a thorough treatise upon the whole subject, containing full specifications and plans, and the latest results of science in reference to ventilation, heating, lighting, &c. Our directors still need a work of this kind. Hardly a week passes that we are not importuned upon the subject. It would be great economy to have it, and its good effect, if every board of directors had a copy, can hardly be estimated. We, therefore, repeat our request, because more convinced now than before of the necessity and wisdom of the legislation asked for.

SUPPLY OF TEACHERS AND STATE NORMAL SCHOOLS.

It is no easy task to supply with a competent teaching force a State like ours, where more than *twenty-two thousand* teachers are constantly required to keep the schools in operation. When we bear in mind our present low average of salaries (males, $37.28, females, $29.22) and the uncertain tenure of office, both of which deter young men and women either from entering the profession or from remaining long therein, we have reason to congratulate ourselves that the needed supply is so promptly met, and that the degree of attainment and professional skill is so high as it is.

For our general school-work we get but very few teachers from our colleges. In very many of our high schools and in our State normal schools, we find, it is true, college graduates doing very efficient work; but in our other schools, where the primary grades demand most attention, and where the highest professional skill is required that the foundation may be firm and a right impulse and tendency be given for the whole subsequent work, we have to rely upon resources within the public-school system itself, and not upon any helps which may come from abroad. On this account our State normal schools are a necessity as a constitutive part of the public-school work, without which, indeed, the whole interest could have no safe warrant of self-perpetuation.

Serious opposition has been made to the

work of our State normal schools, because, as is alleged, they are displacing the intermediate academic institutions which prepare students for our colleges. Observation shows that our old academies, which have done such noble service to the cause of sound learning in the past, are actually becoming less and less numerous from year to year, because they are found to be less needed. Our colleges, however, are increasing; if not in number, at least a multitude of students entering into, and graduating from, them. The plain inference is, that the sources of their supply have not failed, but are found no longer so exclusively as heretofore in the old academies. The State normal schools, however, have not, to any appreciable extent, brought this about. The advance of our public shools has caused it. This advance has given us, in almost all of our centres of culture, vigorous high schools, where, in very many cases, the whole range of academic studies is attended to, and very efficiently also. These high schools, the natural outgrowth of any progressive public-school system, will, of necessity, multiply and become even more efficient from year to year; and, for this very reason, they ought to engage the encouraging attention, and not the harsh criticism, of those who have any regard for the highest institutions, which here must find their richest supply of students.

The State normal schools, on the other hand, while doing much academic work which is found to be necessary, and which can do them no injury when rightly organized, must look backward to our common schools, and, as their main purpose, seek to supply these with a body of teachers, who, having added to their ripe scholarship a ready professional skill and a clear knowledge of the whole scope of pedagogic science, may become the model school-masters of the Commonwealth. In this light they are, as already said, a constitutive part of the school-system, and should be so regared by the Legislature and by all thoughtful men.

The policy by which they have been maintained heretofore is, in our judgment, wrong, just because they have been regarded as distinct from the public schools, and not properly entitled to their due measure of support from the common-school fund. Their debts have been too largely the basis upon which appropriations have been made in their behalf; and, strangely, the very appropriations made to diminish indebtedness have been made debts again by mortgages to their full amount, and these still further secured by transfer of insurance policies to the State. It is not their debts that the State need concern itself with, unless the aim be to purchase them and make them State property—a policy which would most certainly lessen their efficiency, diminishing at once the zeal of their respective districts, which now regard them as under their special patronage and care. If one or more of them fails, or its indebtedness becomes too excessive, then by law it can be set aside and no longer regarded as a State normal school. Their challenge to the Legislature should be, *that they are a necessary part of the public-school system of the State; that a proper supply of well-trained professional teachers will be impossible without them; and that the State ought, as other States are doing, so far to maintain them as to make them the most efficient possible in their special work.*

The legislation needed is, that the fund appropriated to the public schools be enlarged so as to embrace provisions for the State normal schools. To cover the amount paid annually to students receiving State aid, which will require between fifty and sixty thousand dollars, there should be added annually enough to make the whole appropriation to the State normal schools at least $150,000. This amount, after deducting the amount legally due students receiving State aid, should be distributed upon the basis of the average number of students annually attending each school, whose ages are seventeen or upwards, provided that no part of the fund received shall be expended except for teaching and library and apparatus; and that all books and apparatus purchased by said fund shall revert to the State whenever any school which has received it shall cease to be a State normal school. Under such legislation, these schools can, by their own energy, increase their income from tuition and boarding, and gradually remove therewith all their indebtedness, and become, as they ought to be, the most efficient factors of the educational work of our common schools.

LENGTH OF SCHOOL-TERM.

A moment's thought will show that there must be great neglect of the children on the part of school directors in many sections of the State, where we find the school-term extending over only five or six months, with a change of teachers nearly every term. The organization of the school-room work by the new teacher in the way of classification and other routine detail must consume some time. Then, to form a proper acquaintance

with the children so as to know their differing temperaments and capabilities, and with their home-life and daily associations, so as to bring before his vision, as far as possible, their probable future, to give definite purpose to his instruction, and make it something more than mere text-book memorizing — all this must take much more time. Hence, when fairly ready for his most effective work, and when it can be made to reach into the inward soul-life of the pupils and touch the very heart of all those forces which enter into the permanent build of personal character—just then comes the necessity of closing the school, and his work all stops, to be more than half dissipated and lost before another new school-master can begin another attempt. The injury of these short tread-mill processes reaches further than the children; for the teacher, knowing it all, loses that greatest impulse to earnest work which comes from the delight of watching the bloom and ripening harvest of his patient field-work and seed-sowing.

Upon districts where these short terms prevail, the money of the State is almost wholly thrown away so far as any benefit derived by the children is concerned. Of course, the appropriation will lessen the per cent. of direct taxation upon the part of the directors, but this is not the object of the appropriation. On the contrary, its purpose is to insure, so far as possible, the thorough and constant schooling of the children, and to encourage the districts in their efforts to accomplish this. Probably no school-district in the whole Commonwealth, with the State appropriation added to the maximum levy of thirteen mills upon a fair valuation of the taxable property of the district, would not be able to extend its school-term to eight months at least. It is a great wrong, therefore, to the children, whose voice of complaint is too feeble to be heard, and an injury to the whole educational work which the law seeks to maintain, to keep the minimum term of teaching so low as five months, especially when the average already reaches nearly seven. We repeat our request, therefore, that the present law fixing the minimum school-term at five months be so changed as to raise it to six months. This is not as long as it should be, but it will be one step in advance which the Legislature ought to find no hesitation in taking.

INSPECTION AND SUPERVISION.

No matter has given us more concern than the inspection and supervision of our schools. The field, including the whole State, is that of an empire. Many counties have become so populous as to have quite outgrown the old system of inspection. The introduction of city and borough superintendents has helped to bridge over for a time the difficulties, but, even with their aid, our present system of county superintendency needs enlargement to make itself properly felt. It is accomplishing all it can, and we have no complaint whatever to make against the superintendents, but we have abundant reasons rather to admire their faithfulness and zeal. Any one can see, however, that to spread the labor of one man, no matter how capable he may be, over a range of districts where three or four hundred teachers are employed, must, of necessity, make it very thin. Frequent visitations, or a thorough examination of school-rooms and grounds and appliances, and many other matters which require constant watchfulness, are simply impossible.

What is needed—how much only those familiar with school work can tell—is that our county superintendents be authorized to form, within their respective counties, district circuits, including not less than thirty teachers and not more than eighty, each of which circuits shall have a district superintendent, elected by the directors residing therein, whose duty it shall be to report to the county superintendent each month during school term the condition and progress of the schools within his circuit, after a careful investigation thereof, giving full details of all that the county superintendent may feel to be necessary to know for the further improvement and efficiency of the educational work therein. The district superintendent should be paid out of the funds of the districts constituting his circuit, each district paying its *pro rata* share, and his minimum salary should be equal to the highest salary received by any teacher within the circuit over which he has jurisdiction. All this more definite inspection should be under the control of the county superintendent, who should have authority to commission the district superintendents within his county upon their election by the directors, with power to revoke the same for the same reasons as he now has power to revoke a teacher's certificate. In case of resignation or vacancy arising from any cause whatever, the directors should be authorized to proceed at once to the election of a successor for the unexpired term. The term of office and qualifications should be the same as in the case of a county superintendent.

We have not attempted to frame these suggestions into the definite form of a bill. Our aim is to bring the subject before your attention in some tangible way, that it may awaken discussion and issue in some legislation which shall make our school inspection severe, thorough, and definite.

CHILDREN OUT OF THE SCHOOLS.

We are confronted with two extremes when examining into the number of children not availing themselves of the opportunities offered by our public schools. One extreme is that of vagrancy and helpless pauperism; the other, that of greed for wealth, which violates the plain provisions of the law by employing children under age in manufacturing and mining labors, keeping them either thoughtlessly or heartlessly from the very privileges which the Commonwealth has placed within their reach.

In regard to the first: No children should be allowed to pass their time in vagrancy, nor should any be thrown into our almshouses, or be farmed out by our inspectors of the poor. The associations of an almshouse, where the very atmosphere of pauper life must be breathed by the child year after year, where even the insane are herded with little care and still less knowledge of the right methods of treatment, at the sight of which, day after day the poor young life of the child is chilled and blighted, or, deprived of every gleam of hope, grows desperate and criminal—are these the associations which a Christian civilization can allow a child to endure? The only present remedy which we have—that of farming the children out without any organized effort to train them to independence and self-respect—is not sufficient. It will not meet the case. Industrial schools, embracing sufficiently large districts, should be established without delay. All the counties within such districts should be required by law to send every vagrant child and every young pauper in their almshouses (these young paupers number over a thousand) into the schools, where in addition to the common branches of our public schools, such industrial arts should be taught as will be best suited to bring these children up to lives of useful industry and independence. This will be economy both in a material and moral sense, entailing no great expense upon the counties, and saving hundreds from the disgraceful future of confirmed tramps, and paupers breeding paupers.

We may be able to do something with adults of such character if the work be under proper organization. But why try the tantalizing task of cleansing the polluted streams while leaving the fountains filthy, to roil them again as fast as cleansed? We must take hold of the young, turn them, through proper schools, to higher purposes of social life, and save them from the bondage that awaits them if they are not trained to intelligent industry. It is purblind folly to for-weary ourselves with pulling out the grown-up darnel, while leaving the ground from which it springs full of the pernicious seeds which make certain another baneful crop to choke the rising corn.

In regard to the second extreme, the difficulty is not so easily obviated. Many parents are in such circumstances of life as to need the service of their children in support of the household. Their necessities are often so pressing as to make the temptation very strong to use, in this way, the service of sons and daughters at a very tender age. Experience shows us that all legislation which, in any way, effects the autonomy of family-life must be carefully guarded; for there are most delicate relations in the bond of home, whose disturbance is likely to do more injury than good. This much, however, can be said without any hesitation, viz: that no parents can be justified in keeping their children in a state of *illiteracy, which is the worst form of bondage*, in order to reap the advantage of their labor. When the relation between children and parents is of such mercenary character as this, the very idea of family-life is violated, and the sacrifice, in a moral point of view, so far outweighs the material benefit, and the injury both to the children and the State so far over-balances any profit supposed to be gained by either parents or employers, that the wisdom of our law as it stands on the statute book is fully justified. It makes provision (see act approved April 21, 1849, P. L. 672) to protect the children before the age of thirteen—a period when they have little qualification for constant labor—that they may have time to gain some measure of intellectual culture in the schools; and after the age of twelve it still further secures to them at least one quarter of the year for school purposes. The penalty for violation, in case of parents as well as employers, is severe. Yet, notwithstanding the law and its severe penalty to deter from its violation, we have convinced ourselves that it is in very many sections a dead letter, and requires far more care than it receives upon the part of citizens who have any deep interest in the matter.

School inspection should include this state of affairs as part of its work. There should be in every school district of the State a careful census of all children of school age therein, including the number enrolled in the public schools, the number in actual attendance, the number in private and parochial schools, *the number of illiterates, and the number employed in factories and mines under legal age.* Such full report, made under authority, should be the proper evidence upon which prompt efforts should be made to secure the rights of the children as contemplated by our present half-forgotten and unexecuted legislation. When this is done, the way may be opened for some more definite and strenuous legislation, to do away with that illiteracy which now so pains the hearts of men and so persistently challenges the thought of statesmen.

SCHOOL BOOKS AND COURSE OF STUDIES.

In regard to the method by which our schools shall be furnished with necessary text-books, we have nothing to add to our former report. But as the matter is important, and we are so frequently asked to interpret the law upon the subject, we feel justified in repeating here what we have before brought to your notice.

"Whether the law authorizes the purchase of school books out of district funds, to be furnished free to all the pupils attending the public schools, is a doubtful question, which has been decided differently by county courts; and to make the matter plain to all school boards, and not to leave it a trap to ensnare them, the attention of the Legislature is respectfully directed to the passage of a bill which will rest the purchase of all necessary school books in the discretion of the proper school directors. The Supreme Court of the State has already decided that "no appeal can lie against a school board for an indiscreet exercise of a clearly-granted discretion;" and if, now, the Legislature will pass a law permitting school boards to purchase all public-school books required, or if, by another act of the Assembly, the present law is interpreted in favor of school boards exercising this right, or if the Legislature, in order to remand the matter back to the people of the several school districts, will authorize school boards to submit the question to the voters not oftener than once in every three years, at an election for school directors, requiring an affirmative vote of a majority of all the taxables to sanction the purchase of books by the school board, such legislation will determine a question which disturbs a large number of the school districts of the State. Objections to such a law can be conceived, but none which surmount the reasons for its passage, especially if the question is submitted, by a local option law, to the people of each school district. Our whole system, while general, is largely controlled by the various school districts, and the matter of supplying the required school books, may as properly rest in the discretion of the respective school boards as the determination of the courses of study which are now regulated, beyond the branches named in the law, by these same school boards.

"And it is in favor of such a law that it would save expense to the people; it would be a growth of the system in the line of its previous development, and it would sanction the action taken by many of the most progressive school boards in the State, who have been sustained by their constituencies in the purchase of all the necessary school books out of the district funds."

We have been urged to press upon your attention the necessity of requiring, in all the public schools of the State, the use of some text-book upon the evil effects of alcohol on the human system, with the hope that it will aid in banishing from our midst the wide-spread miseries of drunkenness. Of course, already in the moral restraints and discipline of our schools, the virtue of temperance has been a matter of careful attention, and the effort has been to give to our young such measure of self-control as may keep them from the thousand temptations to vice in all its varying forms. The school has joined with the family in this essential work of all training; and we are fully convinced that our school rooms and school intercourse have been as free from the presence and example of drunkenness as any well-conducted Christian household of the Commonwealth. But the children, as they leave school, are often thrown at once into the midst of a depraved social life, crowded with all the gilded fascinations of evil which overmaster the instructions of home and school. All the forces, therefore, that can be used to fortify the will to resist the evil and gain strength for the good, ought to be brought to bear upon children in the school as well as at home. One of these forces in aid of temperance is a clear knowledge of the evil effects of alcohol upon the body, and, through it, upon the mind. Such knowledge will deepen the fear of transgression by keeping in view its dreaded consequences, and thus serve to

some extent at least, to strengthen the reproving voice of conscience which challenges the will to pause before plunging into such an abyss. We are glad, therefore, to see that in many of our text-books on physiology and hygiene this subject is made specially prominent, and that in this way it has been, and is now, more and more, entering into the instruction of the school. This instruction, however, may be made more definite and universal by requiring, through an act of Assembly, that it shall be given in every public school of the Commonwealth as part of the regular curriculum. We must not be too sanguine, however, about the results; for knowledge of sin in all its worst consequences is something quite distinct from the presence and power of virtue in the soul.

So much depends upon the teacher, and so little upon the text; so much depends upon his personal presence, with a character already well formed, whose habits of moral self-restraint are a continual lesson read and understood by processes of the soul far deeper than any acts of intellectual apprehension, and so little upon outward rules and schemes of casuistry; so much upon the inspiration of the good as this touches the child's heart through hourly association with a good man or noble woman as a teacher, and so little upon cold, abstract maxims into which no warming breath of life has yet been breathed; so much depends upon the one, and so little upon the other, in all matters of moral discipline, that we must not, as just said, be too sanguine about the results which such legislation is likely to produce. The very highest claim of Christianity, whether acknowledged or not, is that infinite Love and Wisdom, the very Divine of the Law, became flesh and dwelt among us in the Lord, and that in the presence and power of His inspiration, the Law becomes a life and light in the depths of the human soul in a way far transcending all knowledge of external statutes or ordinances, which without this are in reality dead.

AMOUNT AND DISTRIBUTION OF THE SCHOOL-FUND.

No provision of our State Constitution more plainly shows the wisdom of its framers than that which fixes a minimum appropriation for the use of the public schools. To have left an interest so essential at all times to the welfare of the State to the voluntary impulses of a Legislative body, changing every two years, and liable to be influenced by the excitement of opposing political issues, would have been a dangerous policy indeed. But the determination of a *minimum* amount is not to be regarded for a moment as the *maximum* of appropriation which the Legislature should make. It guards the schools from the danger of being crippled or closed by any too great diminution of revenue, and, no doubt, at the time the Constitution was ratified, the one million was justly regarded as the least sum which the schools would need for their successful management. The Constitution, however, was ratified in 1873. The following tabular statement presents the contrast between that time and the present:

	Number of Schools.	Number of teachers.	Registered pupils.	Cost of tuition.
1873,	16,305	19,089	834,020	$4,325,797 47
1883,	19,919	22,464	966,039	5,403,636 41
Increase,	3,614	3,375	132,019	$1,077,838 94

Thus rapidly have the expenses of the school-work increased since 1873, when a million was regarded *the least* amount required. The salaries of teachers, however, have decreased:

	State, excluding Philadelphia.			Philadelphia.	
	Males per month.	Females per month.		Males.	Females
1873,	$41 58	$32 44	1873,	$154 49	$50 27
1883,	37 28	29 22	1883,	117 00	41 00
Decrease,	$4 30	$3 22		$37 49	$9 27

This decrease of salaries, and the great increase of expenses, the appropriations remaining the same, shows to some extent where the injury is most likely to be felt. The right support and the increasing competency of teachers are alike endangered. Of course, the injury is not so great as it otherwise would be, from the fact that, as the schools and teachers have multiplied, so also the number of taxables and the value of property have increased, and the school-fund derived from direct taxation thereon in the various districts has been very much enlarged. This increase of taxables and value of property, however, makes the tax from which the million is derived far less now than in 1873.

From whatever point of view the matter is considered, it is quite plain that the *minimum one million* is now inadequate to meet the demand of the schools, if made the *maximum of appropriation*. The appropriation needed now is at least one million and a quarter annually, not including the $150,000

each year for the State normal schools, and $85,000 for the county superintendents.

In regard to the basis upon which the *distribution* of the fund for our common schools should be made, we can only repeat what was contained in a former report. From a careful survey of the whole field, and from comparison of views with others, our conviction is, that the law which fixes the base upon which the State appropriation is distributed should be changed. The *appropriation* itself is certainly made in the interest of the children who are to receive its benefit, and hence the very spirit of the law implies that the *distribution* also should be made in the same interest. The distribution is now made on the base of *taxables*, the Department receiving the list every three years. In our judgment, it would be better to put it on the base of *average number of school children in attendance*. This can be done very easily. All teachers are now required to report the average number in attendance. They can still further be required by law to hand a certified list of the same to their respective boards, and the officers of the boards can forward affidavits of the same to the Department of Public Instruction annually, and thus the necessary data will be always at hand. This would make the distribution more equitable, adapt it more directly to the changing needs of the schools, and, at the same time, greatly encourage efforts to secure a larger average attendance throughout the Commonwealth.

If the law is not changed in the way suggested, the lists of taxables ought to be forwarded to the School Department *annually* instead of *triennially*. In many sections of the State, and more especially in the oil regions, the variation in taxables during three years is very great. Indeed, in some instances, a flourishing population during that time may have taken possession of an almost uninhabited wilderness, or a flourishing village may be also deserted, leaving but little behind but unused derricks and untenanted houses. In all our mining districts, whose population is so migratory, the keeping of the lists of taxables unchanged for three years often causes serious inconvenience and sometimes works a great injury.

GENERAL INTERESTS.

Public Instruction has general interests which reach beyond the boundaries of a single Commonwealth, and its proper organization in the way of these general interests, is of importance to the welfare of the work in its narrow limitations. The interchange of teachers between State and State, the proper value and recognition of certificates and diplomas which such interchange demands, and many other matters of kindred character, make it very necessary to secure a more general oversight than is possible through merely local legislation. The *districts* have demanded *county* superintendents, the *counties* have necessitated a *State* supervision, and now the *States* and *Territories* are in need of a more *general organization*, and call for a superintendent whose proper field shall be that of the *Republic* itself. Such central organization is required, also, to secure a better relation between the higher and lower institutions of learning, for these all have to do with the self-same work, only in its differing grades of progress. No greater mistake can well be made than to suppose there is no common bond between the so-called public schools and colleges, universities, and polytechnic institutions of every possible kind. A common life pervades them all. The activities of the one reach into and condition the whole movement of the other.

Added to this, there are peculiar circumstances also which make necessary a more general management. In the far West are the Indians, hemmed in on every side by encroaching civilization. Their children ought not to be left to perish in the wilderness, or roam through prairies and mountains as savage nomads. They should be taken from their barbaric tribal associations, and be brought far away into the atmosphere of civilization, where they may, in proper school surroundings, grow up into a real American citizenship. In the South, are the negroes, now free, and granted the *form* of citizenship, but not yet possessing its *substance;* privileged to vote, yet without proper intelligence or character to exercise it; needing schools, but helpless in way of providing them.

These and other considerations justify us in urging upon educators everywhere the necessity of securing a central officer, who can act as a *minister of education*, coördinate with a minister of war or of agriculture. Without this there must be such a divergence of general methods, such a confusion of general schemes of legislation, as will retard and cripple whatever advance may be possible, and so mar the harmony of the whole movement as to make it resemble an unorganized straggling mass rather than an army in line of march, where each division and brigade, and battalion and company, is in its assigned position—all drilled and ready to strike as one at any and every hour.

PRESENT CONDITION OF THE SCHOOLS.

The usual statistics accompanying this report are sufficiently full to show the present condition of the schools and to indicate the progress which has been made during the year. Every reasonable effort has been made to increase the interest of the people of the Commonwealth in educational matters, to bring before the directors the large responsibility of their office, and to induce the teachers to seek a greater measure of advance in all the requirements of their noble profession. Much, however, remains to be done before the people will fully realize the inestimable trust which is theirs to maintain and perpetuate their schools; much time is yet to be spent before our school directors will wholly recognize their great responsibility in providing the schools with teachers whose character and attainments shall be a civilizing power among us of untold significance, and whose merits, as such, shall be met by a generous support that will keep them in their work year after year; and much care is yet to be exercised in securing the most able superintendents, whose examination of teachers and inspection of schools shall be all that interests of so great moment demand. We are not discouraged, however. We have uniformly been met with kindness, and have found everywhere most cordial coöperation, and we only wish that our desert could be measured by our thankfulness. The harvest is sufficient to show that plowmen, and seed-sowers, and reapers have neither been idle, nor have labored in vain. May the work go forward, and, (to change the figure,) on the solid foundation already laid, may a superstructure rise, which, in symmetry and strength, shall be more beautiful than the Parthenon, and outlast the Pyramids.

Respectfully submitted.

E. E. HIGBEE.

I HAVE seen a curious child applying to his ear
The convolutions of a smooth-lipped shell;
To which, in silence hushed, his very soul
Listened intently; and his countenance soon
Brightened with joy; for from within were heard
Murmurings, whereby the monitor expressed
Mysterious union with its native sea.
Even such a shell the universe itself
Is to the ear of Faith; and there are times,
I doubt not, when to you it doth impart
Authentic tidings of invisible things;
Of ebb and flow, and ever-during power;
And central peace, subsisting at the heart
Of endless agitation. Here you stand,
Adore, and worship, when you know it not;
Pious beyond the intention of your thought;
Devout above the meaning of your will.

—*Wordsworth.*

A TEMPERANCE LYCEUM.

BY JULIA COLMAN.

PLEASANT among the memories of the past, are the debating schools of our early days. There callow youths measured mental weapons with each other as they framed ponderous Resolutions affirming, perchance, what no one believed, merely to secure the opportunity of disproving the assertion; making "Points of Order" and maintaining the claims of the "Affirmative" or "Negative" with as much zest as if they were tilting at a tournament.

And then the delicious air of mystery; the dignity of holding office; the charming advantages of private meetings to shield them from the outside spectators who might detect the shallowness of their arguments; and the *éclat* of a "public" where parents and sisters could witness their intellectual gymnastics, and applaud their improvement.

What has become of these old gymnasia; or, why have they been discontinued? Have they been profitably replaced by the billiard-room, the club-room, the rowing-match, the skating-rink, or the military parade of these modern days? Fashions will change, we suppose; but why should we permit the rage for muscular development to quite replace mental gymnastics? Should not the training under teachers, of whom we have so many, be supplemented by voluntary exercises in which the contestants shall try what they have to depend upon for themselves before entering the battle of life?

We could bring many instances to show that this kind of preliminary skirmishing has often proved of great practical benefit to the individual. Many a youth who had read history only just enough to locate principal events and characters has made his first real studies when appointed to lead in a debate on, "*Resolved*, That Bonaparte was a greater General than Washington;" and the moral stamina of many whose first adherence brought victory to their country's flag during the late civil war, was built up by similar comparisons of war with slavery, or of slavery with intemperance.

We also know of cases where proofs of the value of this sort of mental discipline can be demonstrated on a large scale. There is, for example, on the eastern end of Long Island, a somewhat isolated community which fifty years since was noted mostly for its poverty and its drunkenness, if we are to

credit those among them who now compare the past with the present. It so happened in the good Providence of God, that their minds were aroused to serious inquiry as to the nature and the effects of the drink they were taking so freely, and its influence upon their moral and religious character, as well as its relation to the losses they were sustaining in an economic point of view. Some of them began to meet together to talk these matters over, and to ascertain the facts and their bearings. From the first, these meetings were open to all who wished to attend, and all were free to participate in the discussions, temperance topics being uppermost. Gradually, the meetings came to be conducted like a debating school, following the then prevalent custom, and young people were encouraged to become officers, in order to give them practice and mental training; the older ones, however, still continued to attend and participate, and at last these meetings became an element of power which they could not afford to neglect. The spirit of investigation there fostered, extended to all their public interests; and since they found intemperance to be their greatest and most insidious enemy, their principal efforts were directed against that, and the meetings came to be called "The Saturday Night Temperance Meetings."

The results are simply marvelous. Instead of being a poor community of drunken fishermen, they are now a community of shipowners, and about every second man you meet bears the title of "Captain." Their crews are shipped from less fortunate localities. Their young men, instead of playing billiards and sowing wild oats, frequently, by the time they come of age, have from $1,000 to $5,000 invested in different vessels, this being their favorite mode of insurance. But they have very few disasters, only one shipwreck having occurred during the first thirty years of the existence of their shipping, doubtless because it is officered by total abstainers. The number who have entered the learned professions is far above the average in other communities. You find some one or more of them, ministers, lawyers, doctors, in almost every town in Long Island. The post-office in this place, which serves a population of about seven hundred, delivers a larger proportion of postal matter than any other in the Empire State. This desirable condition of things, of which I have given but a hasty and imperfect outline, was brought about mostly by the effective manner in which topics of general interest, and especially temperance topics, were handled in this well-conducted debating school.

I am not, however, intending to suggest the general adoption of the old-style debating school. I have given details of this, which was somewhat unique, to illustrate what elements of power are wrapped up in the candid public examination and discussion of live questions. Indeed, I have one very serious accusation to bring against the usual style of resolution and debate, in that it involves the practice of arguing for argument's sake. To many of the resolutions, one of the two sides is morally right, and the other morally wrong; and it frequently happens that some one espouses the side of wrong for the sake of showing his skill in argument, considering his skill all the greater if he can make the worse appear the better side. In trying to accomplish this he often says, "I believe," when he does not believe; "It seems to me," when it does not seem to him. He tries to make seem true to others what he knows is not true, until he half convinces himself; and he puts himself in false positions which he is often called upon afterward to defend, until he hardly knows what he does believe; in short, without intending to do so, he tells falsehoods, and makes others believe them, in order merely to show his skill in argument. We are told that an occurrence of this kind in which Thomas Paine, then a young man, was put on the wrong side of a Biblical argument, was the starting-point of his career as an infidel.

Such mental acrobatics (if I may coin a word) do not tend to bring out the truth, nor to strengthen the mind; they rather tend to develop skepticism in the hearer and in the speaker; they place triumph above truth, and sophistry above reason. They confuse rather than clear the intellect. They prepare lawyers to justify themselves in clearing the guilty, and in placing their own success above the well-being of society. This serious allegation against the old debating school does not apply to all cases. The greater the desire to seek the truth for its own sake, the less would be these evils, and this was a prevailing element in the case above detailed. Still the abuse is easy and common, and we cannot but believe that it had something to do with the decline of that institution in general public favor; but we do not consider that element an essential ingredient. Let us see how the good can be retained and the evil dismissed.

If the search after truth be made the ruling motive, the question could be differently

framed and differently treated, with no abatement of interest; but with the added ability to see the truth, which is always an element of power. Suppose, as an illustration, we take up the possible treatment of some temperance questions, for example: "How does the Use of Alcoholic Liquors Impoverish a Community?" A leader and a second, perhaps, also a third and a fourth debater should have been appointed at a previous meeting, and after these have spoken, others may have an opportunity. It should be the aim of the leader to make his statements so clear and so comprehensive as to leave as little as possible to be said by those who follow, while the latter must use their best efforts to add something of importance, or to detect some error in the leader's statements or arguments, the audience to decide by ballot who has made the best argument, if it be necessary to do anything more than to leave it to the spontaneous judgment of the audience. Another method would be to require the leader to have at least the outline of his argument in writing, with the statements numbered; and this, or a duplicate of it, being placed in the leader's hand, the latter may, in summing up, decide which have been established and which have been lost. In any case, the credit each one receives should depend upon the truth he may develop, and not on the sophistry of his arguments. This places the truth in the exalted position to which it has a right, and both participators and audience would feel very much much more certain of understanding the subject under discussion than they would under the old method.

The range of profitable discussion would also be greatly extended by the adoption of this method, as will be shown by the suggestion of a few subjects, such as—"What is the Origin of Alcohol?" "Is there Alcohol in Cider?" "What is the Process of Manufacturing Beer?" "Is Alcohol a Poison?" "What is the Average Mortality Resulting from the Use of Alchoholic Drinks?" "What does the Drink in our Drinking Communities Cost those who do not Drink?" "What are the True Relations of Temperance and Christianity?" In fact, it is principally for the benefit of the temperance work that we would suggest the revival of the lyceum with this improvement, and it might appropriately be called "The Temperance Lyceum."

We are already having a very successful movement in the direction of temperance schools (weekly), planned after the general model of the Sunday-school, including primary classes and advanced classes with textbooks suited to all grades. The children and teachers take hold of this eagerly, and manifest much enthusiasm in the studies there prosecuted. Indeed, it is the natural disposition of children to study and learn, and these schools are likely to be not only more profitable but more permanent than the juvenile "Societies" of different sorts which have not the educational element for a leading feature.

But we cannot expect our young people to take them up very largely unless they enter as teachers. There is at present abroad in the community too much of the notion that anything of the "Band of Hope" sort is for, the infant-class grade. We hope they will outgrow this in time, and come into the temperance school very much as they now come into the Sunday-school. But this must be looked for more in the next generation of children. Those already grown up cannot largely be reached by this institution; but they might enter a temperance lyceum with some enthusiasm, if they understood how practicable and enjoyable it might be made. Such a temperance lyceum as we have been describing would just meet their wants.

There are now, as never before, books which can be made available for thorough investigation of these topics in a very satisfactory manner, among which we may mention Dr. Richardson's "Temperance Lesson Book," "Alcohol and Hygiene," "The Juvenile Temperance Manual for Teachers," Dr. Story's powerfully written work on "Alcohol and its Effects," in very popular style, and Brown's "Physiology," which contains four chapters on brain poisons; just what we hope to see yet in all our school physiologies. A knowledge of these would help systematize and utilize the various items of information afloat in the papers and other temperance literature. Indeed, we can not now think of any popular movement which would more promptly induce a study of the very valuable additions which have been made to temperance literature within a few years, and give people an understanding of the true nature and effects of alcoholic drinks, as they must understand them before they will fight them effectively.

Once commenced, there is very little doubt that such lyceums would be kept up. The boys and girls who graduate from the temperance schools now getting under prosperous headway, will start such debating schools, if not already started, and they will be well prepared to sustain them too. We

believe, however, that many of our young people of the age now "left out in the cold" by our temperance societies, will take this matter into consideration, canvass their several localities, and occupy some of them weekly with a "Temperance Lyceum."

TREE-PLANTING.—No. IV.

WHAT TO PLANT.—NO. 2.

BY NATHANIEL H. EGLESTON.

"Ye may be aye [always] stickin' in a tree, Jock; it will grow when ye're sleepin'."

—*Scotch Farmer.*

THE elm, of course, will not be forgotten or neglected by the tree-planter. As a single tree on the lawn, or by the side of a wide road, where it has room in which to spread and develop its true character, we have no tree among the broad-leaved or deciduous species equal to it in combined grandeur and beauty. And so it has been a favorite tree for planting by the road-side, dividing favor in this respect with the maple alone. It reaches its best development along the river-valleys of the Middle States and New England. No one who has seen the elms of the Connecticut Valley at Northampton or Deerfield, or who has walked under the over-arching elms of Temple Street and Hillhouse Avenue, New Haven, will ever expect to see anything finer in tree-form, or wonder that a city which bears the honor of being the seat of Yale College should also be called the "Elm City."

But the elms, of which we have four species at least besides the white, are all estimable forest trees, having a high fuel-value as well as great usefulness as timber for many constructive purposes. Elm is the favorite wood for the hubs of carriage-wheels and for ships' blocks, and is in demand for many other uses. It bears well exposure to the atmosphere. While it grows best in deep, moist soils, it is found in a great variety of situations.

The birches, among the most widely diffused of all our trees, are also among the most valuable, though they have often been underrated because of their very abundance, or because they do not compete with the oak and the pine as timber-trees. But they have a high fuel-value, and, when we consider that by far the largest and most necessary use of the trees is for heating purposes, we shall feel that this class of trees ought to be cherished by us. They have other qualities, however, which commend them to our attention. For many small articles of manufacture the birch is preferred to any other wood. For spools and bobbins, for instance, and for many articles made by the turner's art, the white birch is in great demand, and birch-forests are frequently bought by our manufacturing establishments, to the extent of thousands of acres, for the purpose of securing a sufficient supply for such uses. The (in one view) insignificant article of shoe-pegs make annual demands upon the birch-forests to the extent of many acres, these little helps to locomotion being made very commonly of this wood. The white birch, moreover, has large claims as an ornamental tree. What is finer than the delicate ramification of its limbs, which gives it a positive beauty in winter, while in the leafy season the contrast of the white wrapping of its silvery trunk with the prevalent green of grass, and the darker hues of other trees around, sets the whole lawn or landscape into life? Indeed, the birches, as a whole, are among our most beautiful trees.

The beech is another of the nobler forest-trees, carrying a denser mass of foilage than most other trees, while its wood is among the most useful, having a high specific gravity, great value for fuel, and is held in much esteem for many mechanical uses, especially in the manufacture of planes, tool-handles, and the like. The fruit of the beech-tree, the beech-nuts or beech-mast, is also valuable as food for swine, and in Europe the right of feeding swine in the great forests of beech and oak, or the right of "pasturage," was one of the most valuable rights of the peasantry. In the endeavor to improve the quality and productiveness of the forests in recent times, by protecting the young trees from injury by animals, this has been the most difficult right to extinguish. The peasantry have clung to it tenaciously.

The willows have not received the attention which they have deserved from tree-planters. The weeping-willow, an imported tree, and limited in the range of its adaptability to our soil and climate, has been used to some extent as an ornamental tree on the lawn and as a funereal tree in the cemetery, and we have been accustomed to see other willows growing spontaneously along the water-courses, without regarding them as having any particular value. Their principal use has been as cheap fuel, except when a powder-mill has happened to be near where they have grown, and then the owner of them has found it for his advan-

tage to cut off the sprouts, after a few years' growth, and take them to the mill, as the qualities of this wood make it very desirable in the manufacture of powder.

But the willow is quite a valuable tree. Few trees are so easily cultivated or adapt themselves to so many situations. It grows rapidly, and the white or gray willow especially, if allowed to do so, attains a large size. There is one in Stockbridge, Massachusetts, which at four feet from the ground measures twenty-two feet in circumference. It is said to have been planted seventy-five years ago. Its limbs spread so as to cover an area of nearly one hundred feet diameter, and they are so large as to admit of seats being constructed among them in the form of a gallery, which is reached by a staircase from the ground, and will contain nearly a hundred persons.

Contrary to the general impression, the willow is not a tree which is confined to low or wet situations. It flourishes equally well upon high ground. In Europe it is highly esteemed as a timber-tree, and willow-lumber is constantly quoted in the market. It is used much for house and ship floors, and for the frames of buildings. It is light, tough, and elastic. A peculiarity of it is that it does not splinter as many woods do. This adapts it to use for flooring, and for carriage and cart bodies. It is used in the manufacture of bowls, trays, and other vessels, and for turned goods of various sorts. It has also great durability under water or when much exposed to its action. It is very valuable, therefore, for the floats of paddle-wheels and the buckets of mill-wheels.

Considerable attention has been given to the willow of late in the Western States, especially in those which have been lacking in trees, where it has come into use to some extent for hedges and wind-breaks. Its use may well be encouraged on a larger scale. Few trees will yield a supply of fuel and timber as soon as the white willow.

Special attention has been recently called to one of our native trees which we have not mentioned, but which ought not to be passed in silence. It is the catalpa. This tree abounds in the region adjacent to the confluence of the Ohio and Mississippi Rivers, but is found more or less throughout the Southern and Middle States, and in the lower portion of the Western. How far toward the north it can be successfully cultivated, remains to be proved by experiment. Hitherto it has been classed among the ornamental rather than the useful trees; its large fan-like leaves and showy clusters of flowers, somewhat like those of the horse-chestnut, make it a very attractive object on the lawn or by the street-side. In its native region, however, it has had a reputation for great durability, especially when exposed alternately to the influences of dryness and moisture. It has consequently been much in request for posts for gates and fences, and specimens have been exhibited which have been thus used for a great number of years without showing signs of decay to any considerable extent. The tree is said to have been a favorite with the Indians for the construction of canoes, because of its durable quality, when exposed as canoes are, and because of its not being liable to crack. Latterly it has been much sought by the railroad companies for ties, on account of its durability. It has been so much in demand that the present supply for this purpose is likely soon to be exhausted. There is an increasing demand for it also for the uses of the cabinet-maker and carpenter, as the wood is of a beautiful color and grain, and takes a high polish, making it valuable for the manufacture of furniture and for the inside finish of houses. With these desirable qualities it combines great rapidity of growth, so that it promises to be one of the most valuable trees for the use of the planter.

There are two species or varieties of this tree, though until recently they have been confounded. They are now known as the hardy and the tender, or *Catalpa speciosa* and *Catalpa bignonioides*, and are distinguishable chiefly by their seeds and the time of the appearance of their flowers, the one blooming about a fortnight before the other. The earlier one is the more hardy, and is to be chosen by those planting north of the Ohio.

The railroad companies of the West are wisely turning their attention to this tree, and planting it on a considerable scale in view of their future wants for ties, and others are doing the same, on account of the promise it gives of pecuniary returns.

Another tree may well be spoken of also in connection with the catalpa, viz., the ailanthus, or "tree of heaven," as it is sometimes called. This tree, originally from China, has come quite domesticated with us. It grows as far north as Portsmouth, New Hampshire. It is of rapid growth, is propagated easily from seeds or cuttings, and attains a height of seventy feet. The wood is very hard and compact, has a beautiful grain, and the tint of fresh mahogany. It is valuable for the cabinet-

maker's use. The ailanthus was a fashionable tree formerly, and was much planted in door-yards and on the streets of many of our cities; but the disagreeable odor of its flowers, and perhaps also its disposition to throw up suckers freely, led to its being discarded. But the bad odor of its blossoms pertains to the trees of the male sex only, and may be avoided by a proper selection in this respect. The odor, however, will be no special objection to a tree when it is to be planted not as an ornamental tree, and near the house, but for forest purposes. The ailanthus has a high value for fuel. Prof. Sargent, of the Arnold Arboretum, commends it in strong terms, and expresses the opinion that we have no tree that promises to give the planter so valuable return in an equal space of time.

An entire and very valuable class of trees, with the exception of a single one which we have mentioned, remains to be spoken of. It is that of the evergreens, or trees which are not stripped of their leaves during any part of the year, distinguished otherwise as the coniferous or cone-bearing trees. As a class they are of a softer texture and less specific gravity than those of which we have hitherto spoken, and which, in commercial language, are known as "hard-woods." But the evergreens are not less valuable than the latter. Indeed, they make up the great bulk of our lumber-traffic, and furnish the largest share of material used in the arts and industries of mechanical life. Nine-tenths of the lumber in the market now is probably that of a single species of the evergreens, the white pine. The forests of the Pacific slope are made up almost wholly of the coniferous trees, the red-wood being the principal; and a belt of pines extends along the Atlantic coast and around the Gulf of Mexico to Texas. Of the white pine we have spoken already. The yellow and pitch pines, though inferior to that, in some respects, are of great value. They do not require so cold a climate or so rich a soil. They are proverbial for growing on the poorest ground, which they tend to enrich by the decay of their foliage as it falls from year to year. On this account the pines may be used to prepare the way for other trees which it is desirable to establish.

In the Southern portions of this country the yellow pine has long had a special value, on account of its yield of turpentine and its associated products. It is also very valuable for its lumber, for some purposes being preferred to the white pine, and, as the latter is becoming scarce, the former is often used as a substitute for it. It is harder than the white pine, and is coming into use more and more for floors, stairs, window-sashes, and many other purposes.

The hemlock, though for the production of lumber it is inferior to the pine or the spruce, is a very valuable tree. It is the most beautiful of all our evergreens, for while it attains a lofty stature, like that of the pine, its limbs and foliage are more delicate, and the trees have a more graceful appearance. It is recognized as one of the most desirable trees for planting on the lawn. It is one of the best trees also for use in making screens and wind-breaks, and no tree is better for forming hedges, as it bears the shears extremely well. Though it does not produce lumber of the first class, yet where it is not exposed to the weather, as when used for the sills and rafters of buildings or for lining-boards, hemlock-lumber is strong and durable, and holds nails better than pine does. But in addition to its other merits, the bark of this tree is among our most valuable tanning materials, and vast numbers of the trees have been cut down in the forests and left to decay after being deprived of their bark; treated, as one has aptly said, like the buffaloes, that are stripped of their skins and left to decay.

The spruces, black and white, deserve attention. The black spruce, especially that which grows in the Eastern States, supplies a lumber which for many purposes may be substituted for the white pine. For joists and roof-beams it is preferred, as also for the lighter spars of vessels, because it is stiffer. For boards also the spruces are extensively used in place of pine. The Norway spruce is completely naturalized in our country, and deserves consideration by the tree-planter. It is one of our largest and finest trees, and second only to the hemlock in beauty and for ornamental purposes. When allowed sufficient space it spreads its branches widely and in a downward direction, so that after a few years they rest upon the ground, and the tree rises thence, as almost a solid cone, to the height of seventy feet or more, forming at all seasons of the year a delightful object. This spruce will be found among the best trees for making shelter-belts on the exposed prairies and along the sea-coasts, and whenever there is occasion to form screens to protect from troublesome winds.

In speaking of planting by the sea-coast, however, it ought to be borne in mind that many trees will not bear the exposure to

winds which are not only severe in themselves but are also laden with salt-sprays. It is thought that some of the hard-wood trees bear this exposure better than the evergreens, and that the latter do better when they have a row or two of such trees as the poplar or the bass-wood planted nearest to the water to form a partial screen from them. But, wherever trees are exposed to strong winds, they bear the exposure better when planted in several rows than when they are in a single line. They seem in the former case to give each other support.

The cedars are as widely diffused in this country as any trees we have. They are found, especially the red, in almost every kind of soil and situation. There is no place where we can affirm that the latter will not grow. And it is one of our best trees. It is noted for its durability. Hence it has been in great request for fence-poles, for hop-poles, bean-poles, and the like, and for railroad-ties. It is also a fine-grained wood, and desirable for many uses in cabinet-making and house-building. Its color and peculiar fragrant odor add much to its other merits. It is the wood of which our lead-pencils are made, and is in request for the construction of chests and drawers, as its odor is supposed to be a safeguard against insects injurious to clothing.

Our stock of native trees is so large that we hardly need to seek any from abroad. And yet some European trees of similar kinds to our own are found to be of better quality than ours. Some of the English oaks, elms, and birches are better for some purposes than ours of the same name. The European larch is better than the American, and is to be preferred for planting here.

Among evergreens the Scotch pine (*Pinus sylvestris*) has been noted for its rapid growth and its adaptation to almost every variety of soil, as well as for its valuable qualities as a timber-tree. It is a favorite tree in Europe. It has not been growing with us for a sufficient time to warrant a decisive opinion as to its merits. It has seemed to give promise of being a valuable accession to our list of trees. Latterly, however, there has come up some distrust of it. Trees which had previously grown well, and appeared vigorous, on reaching the age of twenty-five or thirty years have seemed speedily to lose their vitality, and so there has begun to be doubt whether this will become a desirable timber-tree with us. The fact thus noticed may be the result of peculiarity of situation. It needs further time and investigation to determine. It may be the result of bad seed. The true Scotch pine, a native of the cool north, does not bear seed profusely. But there is a degenerate pine of this sort, growing in France and the neighboring countries, which seeds freely. On this account, the seed of the latter is most abundant in the market, and the inferior tree has been widely disseminated as the result. To be sure of the best tree, it would be well to procure seed from a better source. Seed of the genuine sort, or trees, may be obtained without difficulty from Riga, Russia, a source from which it will be advantageous to procure many kinds of trees and seeds, especially for use upon the dry, cold prairies of the Northwest, a region quite akin to some portions of the Russian country. Genuine seed may also be procured from some of our own dealers.*

The "Iowa Forestry Annual" recommended several years ago a combination of the Scotch pine with other evergreens for shelter-belts, and proposed two or three rows of white pine for the centre, two rows of Scotch or Austrian pine on each side, and two rows of red cedar, or arbor-vitæ, outside of these.

We have thus indicated some of the more desirable trees for the planter's use, our design having been to call attention to those which are of established character and recognized worth, and such as are likely to prove successful in the hands of the ordinary planter. We have endeavored, by limiting the number of trees treated of, to avoid confusing the mind of any reader; for persons confused by attention to too many are likely in the end either to abandon planting altogether, or to make such a choice as will leave room for subsequent regret. It is better for the inexperienced to devote their attention to a few of the various kinds of trees than to undertake at once to plant many sorts. Their work is thus simplified, and for this reason will be more wisely and thoroughly performed than when the culture of a great variety at the same time is undertaken. When experience has been gained in this way, and an intelligent interest in trees has been established, the planter may properly, as he will be likely to do, add to the value of his plantation, and, at the same time, to his own pleasure, by experimenting with less common trees, testing their value, and adding them to his plantation as he finds them to

*The best Scotch-pine seed is that known as *Pinus sylvestris*, variety *Rigensis*.

serve his purpose. His tree-planting, which was at first, perhaps, a stern necessity, and entered upon with much doubt und uncertainty, now becomes a source of constant enjoyment. The trees are his friends, and he delights to widen his circle of acquaintance among them continually. And he may widen it to any extent.

SEWING IN SCHOOL.

ABOUT seven thousand pupils of the girls' secondary and grammar schools, in nine sections out of the thirty-one into which the public school system of Philadelphia is divided, have begun to receive lessons in sewing as part of the regular course of instruction.

The subject had been under consideration for some time past, and the Committee on Sewing, a sub-committee of the general committee on Grammar, Secondary and Primary Schools of the Board of Education, had made all needful arrangements for the start. The Committee consists of Messrs. Gratz, Marchmont and Child, and the Superintendent of Schools, Prof. James MacAlister.

No special provision was made in the annual appropriation for carrying forward this work, so that for the present a comparatively small proportion of the girls' schools can be covered. It was the intention to begin in but four or five sections, but the interest manifested by the members of the Board and the principals of the girls' grammar and secondary schools has been such that the Committee felt compelled to extend the instruction to nine sections. This plan distributed the work over different parts of the city, so that different social classes would be reached, and thus a fair test be made of it.

The Committee examined fifteen candidates for positions as teachers, as to their general education and special fitness for the work; that is, their accomplishments as needle-women. Each applicant was asked to write a brief statement of her views as to how sewing should be taught, after which she was given a piece of work to do. Mrs. Moffett, the teacher in charge of the sewing classes at the Girls' Normal School, aided the Committee in their work, and her assistance, Superintendent MacAlister says, was invaluable. Out of the fifteen the Committee found thirteen who possessed the general qualifications necessary, and eleven were willing to engage in the work. It was decided, however, not to issue certificates of qualification to teach until their teaching power and general ability to carry on the work have been tested in the school-room. They were, therefore, simply put on trial until these points are ascertained.

These eleven teachers, it is expected, will be able to cover nearly all the ground in the nine sections named. It is proposed that each division shall receive two hours' instruction each week in sewing, and the Committee decided to start with periods not to exceed one hour each, but that may be modified by experience.

Ultimately the pupils will furnish their own material, and in this way the work in school will be connected with the home, and will be made thoroughly practical. At present, to get the work under way, the Board of Education will supply the plain materials in which the fundamental training is to be given. It has been found by experience that what may be termed the tools must be kept on hand, so that no delay or disorder may occur, and these will be kept in the schools, ready for use—needles, thread, scissors, etc. The work will be graded, like other school work, beginning with the simple operations in the fifth grade, which is about the third year of the school course, and continuing through the highest "grammar" grade, where, cutting, fitting and the making of dresses will be thoroughly taught. At present, however, the work will be largely that of beginners. Mrs. Moffett, of the Normal School, stated that from her experience there, she finds that a large number of the girls over fourteen years of age have no training at all in the use of the needle, and that this state of affairs will be found to be much worse in the lower grades.

A meeting of the principals of the girls' grammar and girls' secondary schools was recently held in Superintendent MacAlister's office, who says the interest manifested by them in the matter is of a most intelligent and earnest character, and evinces a great willingness to co-operate in making the work a success. It was explained that it is designed to exclude all fancy work, and to confine the work to that which is most practical and useful. The Superintendent, in discussing the future possibilities and prospects of the scheme, quoted a report of the Winthrop School in Boston, for 1883–4, where the sewing lessons have been given for some time, and where the subject is thoroughly systemized. This report showed that the pupils had made during the term no less than 4016 articles, of which there

were: Aprons, 652; bags, 51; bibs, 15; buttonholes, 1382; children's dresses, 63; collars, 9; corset covers, 9; dolls' garments, 25; dolls dressed, 12; darning bag, 1; dressing sacks, 13; dusting caps, 4; garments mended, 79; handkerchiefs, 274; handkerchief case, 1; lap bags, 88; napkins, 67; night dresses, 34; pillow slips, 306; quilts, 4; shirts, 10; shams, 46; sleeves, 36; skirts, 104; sheets, 68; shopping bag, 1; table cloths, 32; traveling bags, 2; towels, 114; undergarments, 516; vest and overcoat, 2, and wrappers, 2. The 57 girls of the graduating class have been taught to cut and fit by measurement and drafting.

Supt. MacAlister has had prepared a schedule showing the number of girls' schools and the divisions in the nine sections selected, the number of hours' instruction necessary in each, and the assignment of the eleven teachers. He adds that such has been the demand for instruction in sewing that the system will soon have to be enlarged. The *Ledger* in referring to this subject says:

The needle is an arm of precision, and its use is now taught in schools on the principle of "Make ready," "Take aim," "Fire!" Even very little children, in infant schools, are furnished with large, blunt needles, cordlike thread and perforated canvas or card board; and learn to thread their needles in four movements at the word of command. This drill saves the time which is otherwise consumed by the laggards of every class dropping their material and in needless delays. A number of our public schools have begun to teach sewing; and, as is usually found in bringing industrial work into any school, the pupils doubtless will be refreshed by the added study, and all the readier at other things than if all the time is spent over books and slate. Children so enjoy doing things in concert that the sewing lesson may be made as attractive as play. It requires clean hands, and this in itself is good discipline for boys as well as girls. Ladies who are always craving a bit of usefulness for the fancy work they do in idle hours, might come to the aid of this movement now, in making up lap-bags or sewing aprons of pretty print or gingham scraps for the children in their school sections, to hold and put away the work in, after the fashion described below. Our public schools will gain considerably when the women in every school district begin to understand that everything in the school-room, for teachers and scholars both, is helped along by the knowledge that people outside are caring very much.

In the English schools they are beginning in their department of sewing to rival, if not excel, the Swiss schools whose beautiful work was seen at the Centennial; patching, darning, making button-holes and tucks, are matters of course. Knitted stockings (the work done to measurement by a stocking-scale) were perhaps the least of novelties; but a shirt drawn to scale on a chequered black-board, a cutting-out-table with the measures sunk in it, and the cutting of various garments in paper patterns by the children from scale, were good specimens of mathematical and practical drill and implements. Marking, knitting and gathering were taught by charts. The boys are taught the early standards just the same as the girls, but are presumably not carried so far as feather-stitching. The teacher stands before her class and shows the formation of the stitches on a large demonstration frame, and each stitch is copied by the children on their own pieces of material. Special attention is given to the cutting out, which is taught on a chequered black-board, the lines of which correspond with the sectional paper the children hold in their hands. The patterns are first cut in paper, then measurements are accurately taken, decreasing or increasing the size practiced, and then the material is marked out with inch tape and pencil and cut out. Girls in the third standard and upwards are expected to be able to cut out a garment in paper, one-fourth the ordinary size, in the presence of the Board Examiner, as part of the examination work. Lap bags, marked with the child's name or number, are used to keep the work in that they have in hand, and all work is expected to be finished at the end of the school-year. Cleanliness, fixing and cutting out, are made the chief points of merit.

THE "QUINCY METHODS" ILLUSTRATED.

CHAPTERS FROM MISS PATRIDGE'S NEW BOOK.

FROM advance sheets of the new book by Miss Lelia E. Patridge, entitled "The 'Quincy Methods' Illustrated," we take a chapter or two in the first part, which will afford the reader some idea of its character and style, though hardly serving to give a hint of its wide range and fertile suggestiveness in the special field of which it treats. Miss Patridge has done much good work, and we cannot imagine her making a dull book. Into this has gone the best work of her life. It will be very helpful to thousands of earnest teachers who are eager to know the atmosphere and life of schools better than their own.

A LESSON UPON GRANITE.

General Exercise.

Purpose of the Lesson—Mainly to lead the children to consider what they owe to their parents, and, in doing this, to give them an impulse toward a series of observations, which if continued will end in the study of Mineralogy.

Preparation Made by the Teacher—1. All her sense of responsibility regarding the children's education in morals; 2. Deciding how to intro-

duce the matter of filial gratitude; 3. Arranging the details of the lesson, and bringing the specimens.

Preparation Made by the Pupils—1. All that they feel of affection or know of kindness; 2. Whatever they may have seen or heard of the process of quarrying granite.

Plan of the Lesson—(1) Get the children to tell me all they know about the work done in the quarries. (2) Lead them to think why their fathers do this hard work, and what is bought for them with the money thus earned. (3) Then make an appeal to their sense of filial gratitude. [*Mem.*—Be sure not to leave the mothers out.] (4) Finish by leading the children to see and name three of the parts of granite, the black, the shiny, and the gray.

THE LESSON.

[All the children are in their seats, and the teacher stands by her table, which is covered with bits of granite of various sorts. She begins her lesson thus:]

Teacher [holding up a piece of granite]. Children, what is this?

Children [confidently]. Granite.

Teacher [holding up another]. And what is this?

Children. That's granite, too.

Teacher. But this [holding up the first] doesn't look like that [holding out the second]?

A voice. Because the first piece you had was Quincy granite, and the other was Concord.

Teacher. How do you know?

A child [in a slightly contemptuous tone of voice]. Why, can't you see? One piece is darker than the other.

Teacher [persistently]. But how do you know that this is Concord granite?

Little boy [confidently]. My father told me, and he is cutting a monument out of it down to his shed.

Another child [excitedly]. My father's cutting an urn in his shed, out of Quincy granite.

Little girl [sitting in front proudly says]: *My* father's cutting curb-stones.

Another child [not to be outdone]. My father's cutting curb-stones too.

Young braggadocio [here caps the climax with a flourish by exclaiming]: They are cutting an eagle up to Mr. W——'s sheds, and I went up to see it the other day.

Teacher [entirely unmoved]. That will do. I want you to tell me something more about this piece of granite [the Quincy]. Where does it come from?

A voice. Out of the quarries.

Teacher. It is so hard I shouldn't think the men could cut it out.

Knowing six-year-old [patronizingly]. Why, don't you know? They don't cut it out; they blast it.

Teacher. Can somebody tell me what he means by blasting? [All the hands are waving eagerly.] Timmie.

Timmie [rapidly, and with great dramatic fervor]. Why, you see the men drill some holes—so—[suiting the action to the word, while half the children in the room are making the motion of drilling]—and fill them with powder, and then they put a slow-match to it, and it goes off, and a great piece of stone comes out of the quarry.

Teacher [composedly, keeping to the point of getting the whole story]. But your fathers don't go up to the quarries to cut monuments. [All are very anxious to tell.] Ellie.

Ellie. They bring it down to the sheds on a stone-team.

Teacher. I shouldn't think they could lift it out of the quarry. [Everybody knows this too.] Maggie.

Maggie. Oh, they have derricks to lift it out.

Teacher. After they get it down to the sheds, what then?

Children [together]. They cut it into urns and monuments.

Teacher. Do the men ever do anything to monuments after they are cut? [This throws them off the track a little, and only a few hands are raised.] Carrie.

Carrie. Yes'm; they polish them sometimes.

Teacher [thoughtfully]. It's hard work, isn't it? What do your fathers do it for? [This is put to the whole class, and blocks them for a time; then a small man, with a little old face, who looks as if he had already begun to be made acquainted with the stern realities of life, announces positively]:

Small man. Cos they has to.

Little girl. They do it to get money.

Teacher [still pursuing her point]. Why do they work so hard to get money?

Children. To buy things. To spend at the store.

Teacher. Do they buy anything for you?

Mina. My father buys me candy.

Teacher [gravely contemplative]. And that is all he ever bought for you. [The children begin to look serious, and to consider the matter thoughtfully.]

Ellie [breaking the silence]. My father buys me clothes.

Jakie. My father bought me a pair of boots and a hat once.

Teacher. Those are things to wear; do you have anything else that he spends his money for?

Jean. My father bought me some oranges last Saturday.

Teacher. What did you do with them?

Jean [instantly responding]. I eat 'em.

Teacher. Isn't there something else that he buys for you to eat, that you have every day? All of you try to think.* Something that you had this morning.

Katie. Meat and potatoes.

Hattie. Bread and butter.

Teacher. What would you do if you didn't have these things to eat?

Children [promptly]. Die. Starve.

Teacher [suggestively]. Then what do we think of our fathers, who work so hard to buy all these things?

Instantaneous chorus. They are good. They are kind.

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*It seldom occurs to children that food is bought.

Teacher [continues]. But the meat and potatoes aren't good till somebody has cooked them for us.

Mattie [before the others get a chance to speak]. My mother cooks 'em.

Teacher. Then I think we should say something about our mothers.

Again in a chorus. Oh, they are good, too.

Teacher. I want to know now, how the granite grows? [There is a great giggling at this, and a quick response.]

Josie. It don't grow; it's a stone.

Teacher [persistently]. Well, of what is it made? [This is something of which they never thought, and not one has a word to say.] Each of you may take a piece, and see if it looks as if it was made of anything. [The children each come and get a specimen, and go back to their seats intently studying it, though most of them have seen granite every day of their lives since they could remember. It has suddenly dawned upon their mental vision that there is something new to be discovered in an old and familiar object. After giving them time to look at the granite carefully, and not time to tire, the teacher asks:] What can you see, Patrick?

Patrick. There are bits of black specks about it; dirt, isn't it?

Johnnie [excitedly]. No, the black is right in the stone.

Carrie. It's all mixed in with the rest.

Teacher. The rest of what?

Ellen. The rest of the stone.

Teacher [not to be baffled]. And what is the rest of the stone made of?

Susie. I can see some shiny pieces.

Teacher. Yes [summing up], we have found black pieces and shiny pieces in the granite; what else? Mikie. [Mikie points to a spot of feldspar.]

Teacher. Does it shine?

Mikie [tipping the stone to get more light on it]. I can't see any shine.

Teacher. Is it black?

Mikie [decidedly]. No.

Teacher. How does it look?

Mikie [examining his stone, says slowly]: It looks kinder like gray.

Teacher. I don't quite like the way Mikie said that; can anybody tell me better?

[But the children are too much taken up with their specimens to have paid any attention to Mikie's expression; they were conscious only of his thought. The teacher turns to Mikie, who looks as if he would like to tell about it again, and he says promptly:]

Mikie. It is gray.

Teacher. Everybody who has found something black in his granite may raise his hand.* [Every hand is up.] How many have found something shiny? [All hands are raised.] How many can see the gray. [Nearly everybody.] Nellie has something to say; what is it?

Nellie. The gray in mine looks something like the clay we make balls of.

Teacher. Eddie may tell me what he has found in his granite.

Eddie. I found something black, something shiny, and something gray in the granite.

Teacher. Do you suppose that the granite is made of anything? [Pausing a moment to see if the children are moving toward the previous question—Of what is granite made? and judging by their faces that they are, she continues:] I think I will let you ask your fathers about it, and when we talk of granite again, you can tell me all that you find out. Now the clock says that it is almost dinner-time, and I'll let you go. Perhaps your fathers will be home before you are.

Note.—The moral point is by far the best of this lesson.

READING—IMITATION EXERCISES.

(Pages 176–184.)

Children are not likely to read better than they talk. If in their ordinary conversation their voices are shrill or harsh, their articulation slovenly, and their tones monotonous, the same defects will mar their oral reading. It is idle to expect that the mere fact, that the thought given is obtained from written or printed words instead of from the object or the spoken word, is going to effect a reformation.

Consequently the children should first be taught to talk well, and then there will be no reason why they should not read well.

Aside from phonic drill—which is the best merely mechanical means—imitative exercises are the most effective aids toward reform in this direction. But it goes without saying that *this necessitates the best of examples.* That is, the teacher herself must be a pleasing conversationalist, a charming story-teller, and the best of readers. Being all these, the following exercises are most excellent (in their places) as helps in the teaching of oral reading.

For example: The children of a certain room in one of the Primary Schools of Quincy are sitting with their hats on, ready for recess, but the gong has not yet struck; into the moment of waiting the teacher drops this tiny bit of a lesson.

"Children, play that I am Mr. B——" (the superintendent), "and that I've just come in to visit you. See! here I come," stepping outside of the door and then reappearing. As she steps over the threshold in her new *rôle*, she calls out in a most cordial manner, "Good morning, children.—What will you say to me?" she adds in her usual tone, as the children sit quite silent, looking at her in rather an embarrassed fashion.

"Good morning, Mr. B——," call out some of the boldest.

"Oh, you are not glad to see me, are you?" is the comment and question which follows.

"Yes'm," "Yes, sir," is the confused answer.

"Well, then," insists the teacher, "say good morning to me as if you were. Now try again."

"Good morning, Mr. B——," recite the class in concert; but it is nothing more than a concert recitation, and that does not suit the teacher, who continues:

"If *I* were very glad to see him *I* should say it in this way: 'Good-morning, Mr. B——'" (giving it with great heartiness). "Now let me hear you say it again."

* The hornblende is quite perceptible in the Quincy granite.

By this time they have entered into the spirit of the thing; but their enthusiasm exceeds their discrimination, and they deliver their greeting in a deafening chorus, which has the force of a projectile.

"It would frighten Mr. B——, I am sure, if you shouted at him in that way," is her criticism upon this performance. I can say it softly, and yet be glad too: listen;" and they *do* listen and profit, for now their "good morning" is almost as musical and cordial as her own.

"That is very well," assents the teacher. "I am sure Mr. B——would want to talk more with you after that. Perhaps he would say, 'How do you do to-day?' What would you say to that?"

"Pretty well," respond two or three.

"Anything else?" inquires the teacher, but no one answers. "*I* should say, if he asked *me*, 'I am pretty well, I thank you; how do you do?'" (All this with varied and beautiful inflections.) "Would you like to say that too?"

"Yes'm."

"Very well, you may try."

Now their whole minds are possessed with the idea of imitation, and their very earnestness leads them, unconsciously, to exaggerate. The result is a slight but most amusing travesty on the teacher's tone and manner. This warns her that she has given quite enough for one lesson, and she is grateful to the gong—which strikes just at this moment—for effecting a diversion.

Children being entirely unaccustomed to express thoughts or emotions not their own, must be carefully guarded in all imitative training, lest it lead them to become affected.

Sometimes, idioms new to the children are introduced in these pattern exercises, as well as in the oral language work. Occasionally, a teacher will combine with her imitation exercise, a drill in exact hearing by reciting in her most beautiful voice and manner—and having the children repeat after her, line by line,—some little stanza or poem that would please them. Here is a lesson that will illustrate.

One dreary, stormy day, a little before the holidays, just after the children have come back to their seats from a recitation, and have finished their Busy-Work, the teacher, noticing that they seem a little listless, inquires suddenly, "How many of you have a baby brother or sister at home?" The great majority, judging by the hands.

"How many of you are going to hang up your stockings at Christmas time?" Everybody, and with great energy too, if their style of expressing themselves is any indication.

"That's good," comments the teacher; then without the slightest change of voice or manner she says, "Well—

'Hang up the baby's stocking,'"

The noisy room, full of rustle and motion, is as still as a church in a second, for the words have attracted them, and by the time she gets to the end of the line they have caught the swing of the rhythm, and are all smilingly intent; so she goes on—

"'Be sure you don't forget;'

Willie, what did I say?"

"You told us to be sure not to forget to hang up baby's stocking."

"Yes; who can tell me the very words I said?" Several try and come quite near to giving it exactly. Then she continues—

"'The dear little dimpled darling,'

What is she, Nellie?" The child gives the line word for word, and almost the precise shades of inflection.

"'She never saw Christmas yet.'

Say it, Charley;" and he does. "Why hasn't she seen Christmas, children?"

"Cos she isn't old enough," is the quick and earnest answer.

"'But I've told her all about it,'

Repeat it, all of you;" and they do, imitating perfectly the teacher's voice and cadences.

"'And she opened her big blue eyes;'

Tell us what I said, Susie." The little girl absolutely seems to improve upon her pattern.

"'And I'm sure she understood me,'"

Says the teacher, "All say so." The concert recitation is excellent.

"'She looked *so* funny and wise;'"

concludes the teacher, amidst the smiles of the children, who are called upon to say it together as before, and, as might be expected, give it very expressively.

"That will do. All take slates and pencils—turn toward the board; and in ten seconds everybody is writing, as if babies and Christmas had never been heard of.

Another form of giving imitation lessons is illustrated by the following, also a general exercise. The teacher begins.

"Children, did you ever see a garden?"

"Yes'm," from the class.

"What was it for?"

"For things to grow in," declares a voice.

"And what grew there?" pursues the teacher.

"Flowers and things," is the answer she gets.

"What holds the flowers in the ground?"

"The roots."

"Suppose they haven't any roots."

"Then they couldn't grow."

"Do plants have anything besides flowers?"

"Yes'm: seeds."

"Anything else?"

"Fruit."

"Yes. Now I am going to tell a little story to you that I found, and you may see how you like it." She recites slowly, and with great expression—

"'Kind hearts are the gardens,
Kind thoughts are the roots,
Kind words are the blossoms,
Kind deeds are the fruits.'"

Everybody listens closely, quietly, and when she has finished she says, "I am going to tell it to you once more, and if you remember any of it you may say it with me." So she begins, and some one joins in at "gardens," several at "roots," more at "blossoms," and fully half the

class, having got the run of the thought, say, "are the fruits."

The next day, *without any preface*, the teacher recited this stanza again twice, allowing the children to say what they could remember, and at the second repetition they could recite it from beginning to end. Whether they had indeed learned it "by heart" or not, only the future can reveal.

There is still another kind of imitative work, more advanced in character than that already described, which is intended not only to train attention and form the taste, but to enlarge the mental grasp.

This consists in telling stories, with not too obvious morals (children dislike to have morals thrust upon them), or in reading or reciting either prose or poetry, suited to the capacity of children, but selected always with a special view to variety and vivacity of style.

These can be used with good disciplinary effect as rewards, when the children have been trying unusually hard to do well, or when their conduct has been particularly commendable.

For instance, in a Primary School, where, the day before, the class having written so carefully that nearly all had "daisy slates," the teacher told them a story, because, as she said, they had worked so hard that she wanted to rest them a little.

This day the teacher says to the class, "Did you like the story I told you yesterday?"

"Yes'm," "Yes'm," is the quick response.

"What was it about, Walter?"

"About a naughty boy who stole a bird's nest."

"Anything more? Mary."

"And the poor little mother-bird who cried and cried."

"What kind of a boy was this, children?"

"Bad." "Naughty." "A thief."

"Yes, I think so; and how did you feel about the birds?"

"Bad," "Sorry." "I pitied her." "I was mad at the boy." "So was I."

"Well, to-day all my little boys and girls have taken such good care of themselves that I haven't had to stop to look after them at all, but have been able to go steadily on with my work; so now I have a little time which I might give to a story if you care to hear one."

"Yes'm." "Yes'm." "Do."

"Well, but I want to know if the clock is going, first—let me see if I can hear it tick?" Every one settles down still for a moment. "There, I did. Can I hear it again, I wonder? Yes, I do, and now I will tell you about

PUSSY'S SCHOOL.

"Now, children," said puss, as she shook her head,
"It is time your morning lesson was said."
So her kittens drew near with footsteps slow,
And sat down before her, all in a row.

"Attention, class," said the cat-mamma,
"And tell me quick where your noses are."
At this all the kittens sniffed the air,
As though it was filled with a perfume rare.

"Now, what do you say when you want a drink?"
The kittens waited a moment to think,
And then the answer came clear and loud—
You ought to have heard how those kittens meow'd.

"Very well. 'Tis the same, with a sharper tone,
When you want a fish or a bit of a bone.
Now, what do you say when children are good?"
Then the kittens purred as soft as they could.

"And what do you do when children are bad?
When they tease and pull." Each kitty looked sad.
"Pooh!" said the mother, "that isn't enough;
You must use your claws when children are rough."

"And where are your claws? No, no, my dear,
(As she took up a paw). See! they are hidden here."
Then all the kittens crowded about
To see their sharp little claws brought out.

"Now go and play," said the fond mamma;
"What sweet little darlings kittens are.
Ah, well! I was once the same, I suppose,"
And she looked very wise and rubbed her nose.

"Who can tell me what I told you? Maggie."

"It was about Pussy's school: how the mother-cat called her little kittens together and had them tell her what they were to do when they wanted milk, and they meow'd, and they purred when the children were good to them, and then she showed them their claws, and then told them to go and play."

As Maggie proceeds with her account more and more hands are raised, and now nearly every one has something to say.

"Fred."

"She asked—"

"Who is 'she'?" is the teacher's quick criticism.

"The mamma-cat asked her kittens first, where their noses were, and they all put them up and sniffed."

"Yes. Lucy."

"The kittens all sat down in a row to say their lessons."

"Edith."

"The mother-cat told them to scratch little children when they teased them."

"Tommy."

"The little kittens didn't know where their claws were till their mamma showed them; but I don't think that's true, because my little kitten, when it wasn't old at all, would scratch."

"Perhaps this was a different kind," suggests the teacher. "Now we will see who will march the best." She strikes the bell and they rise; another stroke, they step into the aisle; a third, and they face front.

The teacher, passing across the room to look at the rows, comments thus: "*These* children all stand up well. *This* is a fine line. Jennie B—— is going to make a nice-looking woman. Patrick Mc—— stands like a soldier. I can see *one* boy who doesn't look very tall. I begin to think the girls make better soldiers than the boys."

This last brings every boy into the straightest of positions, then she picks up her triangle, and stepping to its taps, they march off around the room, up the middle aisle, every other one to

the right, every other one to the left, then around to their seats, all in good soldierly style. At a tinkle of the bell they sit, and the Busy-Work and recitations begin again.

METHODS OF ILLUSTRATION.

BY CHARLES F. ADAMS.

WE all remember that tide of object-teaching that swept through the schools and courses of study years ago, and how we envied the favored ones who first learned its cheap trick with a piece of glass, a button or a basket. There was a time when it was something of an affair to develop the uses of a chair, or to find out in the orthodox fashion that a cat had legs, a back and a tail. And somehow it took years to discover that fragmentary and trivial work diluted solid instruction none the less whether crammed from book or object.

Certain kinds of object-teaching have long since been convicted of obtaining credit under false pretenses; but it seems to me that the prevailing tendency is to pass through a similar stage in methods of illustrating. We are assimilating a large amount of new knowledge, and finding by trial and error the paths of least resistance in teaching it. Such a time is peculiarly the heyday of the small theorist and enthusiast.

Teachers are not wanting, nor silent, who seem "pleased with a rattle and tickled with a straw," and we, in our eagerness for novelty, are ever ready to admire a new method of using a wire, a tube or a toy, and sometimes forget that we may cheapen illustrations until they become very dear. And so the insignificant gets prominent, and the good gets in the way of the best.

This tendency to dabble, to multiply details, to magnify the *how* at the expense of the *what*, seems to me a mistake—"an advance backward." To lose the simplicity and impressiveness of great facts and laws, is too high a price to pay for trivial illustration or ambitious completeness. We need neither greater adroitness nor more little things so much as a more comprehensive grasp of what is significant, the greater skill to communicate economically the fundamental things that legitimately enter into the school education of children.

Let us show some general methods of illustration in a single typical study, geography. In teaching the primary elements of earth-study, mountain, plain, desert, cold, country, etc., no patent method or device can take the place of vivid artistic description,—description that shows a quick human sympathy, and lingers lovingly upon attributes. But this gift will avail itself of any accessories to make the word-picture more definite,—the model and moulding-board, the off-hand sketch and more painstaking drawing, the photograph and engraving.

But, for myself, I have not found the moulding-board of great value. The ideal mountain whose height I wish to emphasize is belittled by being represented in inches. Such a mountain range as this comes nearer: (cloth mountain five feet high, made of a settee, inverted chairs and window sticks, and covered with gossamer waterproofs and a sheet.) The difficulty lies in giving the scale; but the little cardboard village at the base contributes somewhat. Moss for trees, sawdust roads, foot-ruler fences, and tippet rivers, may or may not add to its value. With this we can show mountain, mountain range, mountain peak, water-shed, valley, river-basin, diminishing vegetation, snow-cap and snow line, avalanche-path and glacier.

When, later, the surface of a continent is to be shown, I have found a peck of sawdust and a sheet of brown paper, or a blackboard placed horizontally, sufficient. The sawdust holds its place well, may be used dry, and is cheap and clean. The map is drawn and built up in the usual way.

I prefer pictures, however, rather than models, for most work. The multitude of details in pictures gives the scale of size, and they are cheap, convenient, interesting and beautiful; which can be said of few models. It seems to me there are great possibilities in collecting and studying pictures with classes. Of course I do not mean the fashion plates or the cuts from almanacs that are sometimes used to keep children still, but a worthy collection, such as could be made easily by a discriminating teacher from illustrated papers and books, mounted separately on cards or on cloth.

The photograph is one step nearer nature, and should be used more frequently in in teaching. Large photographs of mountains, deserts, icebergs, geysers, tropical vegetation, etc., are valuable, not merely as ornament for a school-room, but as furnishing the best of teaching material. But even the blackboard may be made to show these to some extent. These blackboard drawings of a mountain, glacier and volcano are some of the best specimens of the regular work done by our normal students in getting ready to teach geography to begin-

ners. And I think all will agree that there is a time when these used, properly, would contribute to giving clear ideas in an interesting way. I need not speak of the value of easy off-hand sketching on the blackboard; we understand its importance quite as much as we practice it.

When the time comes for work with maps, let me suggest that they be placed horizontally, and used thus for a long time, keeping the north of the map toward the north of the room. Later, have the maps hung and used on the north side of the room, if possible, to avoid that dreadful twist that gets into one's head by habitually seeing the right hand of the map toward the west. Maps drawn on the floor, large enough for pupils to make imaginary journeys on, may some times prove of value.

American Teacher.

QUEER FLOWERS.

BY GRANT ALLEN.

IF Baron Munchausen had ever in the course of his travels come across a single flower one standard British yard in diameter, fifteen pounds avoirdupois in weight, and forming a cup big enough to hold six quarts of water in its central hollow, it is not improbable that the learned baron's veracious account of the new plant might have been met with the same polite incredulity which his other adventures shared with those of Bruce, Stanley, Mendez Pinto, and Du Chaillu. Nevertheless, a big blossom of this enormous size has been well known to botanists ever since the beginning of the present century. When Sir Stamford Raffles was taking care of Sumatra during our temporary annexation, he happened one day to light upon a gigantic parasite, which grew on the stem of a prostrate creeper in the densest part of the tropical jungle. It measured nine feet round and three feet across; it had five large, fleshy petals, with a central basin; and it was mottled red in hue, being, in fact, in color and texture surprisingly suggestive of raw beefsteak. One flower was open when Sir Stamford came upon it; the other was in the bud, and looked in that state extremely like a very big red cabbage. Specimens of this surprising find were at once forwarded to England (how, history does not inform us); and, after the place of the plant in the classificatory system had been strenuously fought out with the usual scientific amenities, it was at last duly labeled (through no fault of its own), after the names of its two discoverers, as *Rafflesia Arnoldi*.

The mere size of this mammoth among flowers would in itself naturally suffice to give it a distinct claim to respectful attention; but Rafflesia possesses many other sterling qualities far more calculated than simple bigness to endear it to a large and varied circle of insect acquaintances. The oddest thing about it, indeed, is the fact that it is a deliberately deceptive and alluring blossom. As soon as it was first discovered, Dr. Arnold noticed that it possessed a very curious carrion-smell, exactly like that of putrefying meat. He also observed that this smell attracted flies in large numbers by false pretenses to settle in the centre of the cup. But it is only of late years that the real significance and connection of these curious facts have come to be perceived. We now know that Rafflesia is a flower which wickedly and feloniously lays itself out to deceive the confiding meat-flies and to starve their helpless infants in the midst of apparent plenty. The majority of legitimate flowers (if I may be allowed the expression) get themselves decently fertilized by bees and butterflies, who may be considered as representing the regular trade, and who carry the fecundating pollen on their heads and proboscises from one blossom to another, while engaged in their usual business of gathering honey all the day from every opening flower. But Rafflesia, on the contrary, has positively acquired a fallacious external resemblance to raw meat, and a decidedly high flavor, on purpose to take in the too trustful Sumatran flies.

The general principle which this strange flower illustrates in so striking a fashion is just this: Most common flowers have laid themselves out to attract bees, and so a bee-flower forms our human ideal of a central typical blossom: it looks, in short, we think, as a flower ought to look. But there are some originally minded and eccentric plants which have struck out a line for themselves, and taken to attracting sundry casual flies, wasps, midges, beetles, snails, or even birds, which take the place of bees as their regular fertilizers; and it is these Bohemians of the vegetable world that make up what we all consider as the queerest and most singular of all flowers. They adapt their appearance and structure to the particular tastes and habits of their chosen guests.

Now, the fact is, we are all a little tired of that prig and Aristides among insects,

the little busy bee. We have heard his virtues praised by poets, moralists, and men of science, till we are all burning to ostracize him forthwith, for the sake of never more hearing him called industrious and intelligent. He and his self-righteous cousin, the ant, are in fact a pair of egregious Pharisaical humbugs, who have made a virtue of their own excessive acquisitiveness, and have induced Solomon, Virgil, Dr. Watts, and other misguided human beings, to acquiesce far too readily in their preposterous claims. For my own part, I never was more pleased in my life than when Sir John Lubbock conclusively proved by experiment that they were both extremely stupid and uninventive insects, with scarcely a faint glimmering of brotherly love or any other good ethical quality. I propose, therefore, in this present paper, to leave the too-much-belauded bee, with the flowers that cater for his tastes, entirely out of consideration, and look only at some of the peculiar blossoms which appeal rather to the senses and sensibilities of other and more original insect guests.

The wasp, though undoubtedly an irascible and ill-balanced creature, and a *chauvinist* of the fiercest description, is yet a person of far more width of mind and far wider range of experience in his own way than the *borné* and conventional bee. His taste, in fact (like the taste of that hypothetical person, the general reader), is quite omnivorous: while he does not refuse meat, he has an excellent judgment in the sunny side of peaches, and he can make a meal at a pinch off the honey in more than one kind of wasp-specialized flower. But the peculiar likes and dislikes of wasps have produced a curious effect upon the shape and hue of the blossoms which owe their traits to these greedy and not very æsthetic insects. Your bee has a long proboscis and a keen sense of color; so the flowers that lay themselves out on his behalf store their honey at the end of a long tube, and rejoice in brilliant blue or crimson or purple petals. Your wasp, on the other hand, in his matter-of-fact Philistine fashion, cares for none of these things: he asks only plenty of honey, and no foolish obstructions in the way of getting it. Accordingly, wasp-flowers are remarkable for having a helmet-shaped tube, exactly fitted to a wasp's head, with abundant honey filling the bottom of the bell, while in color they are generally a peculiar livid reddish brown, more or less suggestive of a butcher's shop.

We have two or three good typical wasp-flowers, wild or cultivated, in England, of which the snowberry of our shrubberies is probably the best known to the outside public, other than wasps. But the dingy fig-worts that grow by the water-side are far more note-worthy, because they have such extremely odd-looking, one-sided blossoms, made to measure by nature for the wasp's head. The minuteness with which plants adapt themselves to the merest tricks of habit in the insects to whom they are habitually at home is very well illustrated in this queer plant. Bees and butterflies, and all other regular flower-haunters, have a trick of beginning at the bottom of a spike of flowers (as in foxglove or sage), and working gradually upward; so in these cases the pollen-bags ripen first, while the sensitive surface of the seed-vessel doesn't mature till a later period. Thus, the bee, lighting first on the older and lower flowers, in their second stage, fertilizes them with the pollen he has brought from the last plant; while on the upper part of the spike he gathers more pollen, which he carries away to the next plant, and so insures the great desideratum of nature, a healthy cross. But the wasp, with his usual perversity of disposition, reverses all this: *he* begins at the top of the spike, and works gradually downward. To meet this abnormal fancy of the vespine intellect, the fig-wort makes its sensitive surface mature first, while its pollen-bags only shed their mealy dust a little later. So the wasp, lighting first on the newly-opened blossoms at the top, comes in contact with the ripe summit of the seed-vessel, on which he rubs the pollen from the last spike he visited; and then, proceeding downward, he unconsciously collects a fresh lot to carry away to the next fig-wort. Of course, the wasp himself is not in the least interested in these domestic arrangements of the plant whose honey he seeks; all he wants is his dinner, but in getting it he is compelled, without at all suspecting it, to act as carrier for the fig-wort from one spike to another.

Wasps are remarkably sharp and wide-awake insects; and it would be very difficult indeed to take them in. Flowers that bid for their attentions must provide real honey, and plenty of it. It is quite otherwise, however, with flies. Those mixed feeders are the stupidest and most gullible of all insects; and many unprincipled blossoms have governed themselves accordingly, and deliberately laid themselves out to deceive the poor foolish creatures by false appearances. On most mountain bogs in Britain

one can still find a few pretty white flowers of the rare and curious Grass of Parnassus. They have each five snowy petals, and at the base of every petal stands a little forked organ, with eight or nine thread-like points, terminated, apparently, by a small round drop of pellucid honey. Touch one of the drops with your finger, and, lo! you will find it is a solid ball or gland. The flower, in fact, is only playing at producing honey. Yet so easily are the flies for whom it caters taken in by a showy advertisement, that not only will they light on the blossoms and try most industriously for a long time together to extract a little honey from the dry bulbs, but even after they have been compelled to give up the attempt as vain they will light again upon a second flower, and go through the whole performance again, *da capo*. The Grass of Parnassus thus generally manages to get its flowers fertilized with no expenditure of honey at all on its own part. Still, it is not a wholly and hopelessly abandoned flower, like some others, for it does really secrete a little genuine honey quite away from the sham drops, though to an extent entirely incommensurate with the pretended display * * *.

From plants that imprison insects to plants that devour insects alive is a natural transition. The giant who keeps a dungeon is first-cousin to the ogre who swallows down his captives entire. And yet the subject is really too serious a one for jesting; there is something too awful and appalling in this contest of the unconscious and insentient with the living and feeling, of a lower vegetative form of life with a higher animated form, that it always make me shudder slightly to think of it. Do you remember Victor Hugo's terrible description (I think it is in "Quatre-Vingt-Treize") of the duel between the great gun that has got loose from its chains on a ship in a storm, and the men who try to recapture it? Do you remember how the gun lunges, and tilts, and evades, and charges, exactly as if it were a living, sentient creature; and yet all the while the full horror of the thing depends upon the very fact that it is nothing more than a piece of lifeless, senseless metal, driven about on its wheels irresponsibly by the fury of the storm? Well, that description is awful and horrible enough; but it yet lacks one element of awesomeness which is present in the insect-eating plants, and that is the clear evidence of deliberate design and adaptation.

On most English peaty patches there grows a little reddish-leaved, odd-looking plant, known as sun-dew. It is but an inconspicuous, small weed, and yet literary and scientific honors have been heaped upon its head to an extent almost unknown in the case of any other member of the British floral commonwealth. Mr. Swinburne has addressed an ode to it, and Mr. Darwin has written a learned book about it. Its portrait has been sketched by innumerable artists, and its biography narrated by innumerable authors. And all this attention has been showered upon it, not because it is beautiful, or good, or modest, or retiring, but simply and solely because it is atrociously and deliberately wicked. Like the late Mr. Peace and the heroes of the Newgate Calendar, it owes its vogue entirely to its murderous propensities. Sun-dew, in fact, is the best known and most easily accessible of the carnivorous and insectivorous plants.

The leaf of the sun-dew is round and flat, and is covered by a number of small red glands, which act as the attractive advertisement to the misguided midges. Their knobby ends are covered with a glutinous secretion, which glistens like honey in the sunlight, and so gains for the plant its common English name. But the moment a hapless fly, attracted by hopes of meat or nectar, settles quietly in its midst, on hospitable thoughts intent, the viscid liquid holds him tight immediately, and clogs his legs and wings, so that he is snared exactly as a peregrine is snared with bird-lime. Then the leaf with all its "red-lipped mouths" (I will own up that the expression is Mr. Swinburne's *ubi supra*) closes over him slowly but surely, and crushes him by folding its edges inward gradually toward the centre. The fly often lingers long with ineffectual struggles, while the cruel crawling leaf pours forth a digestive fluid—a vegetable gastric juice, as it were—and dissolves him alive piecemeal in its hundred clutching suckers. I have seen this mute tragedy enacted a thousand times over on the bogs and moorlands; and, though I often try to release the fresh flies from their ghastly living but inanimate prison, it is impossible to go round all the plants on a whole common, like a philodipterous Howard, ameliorating the condition of all the victims of misplaced confidence in the good intentions of the treacherous sun-dew.

Our little English insectivorous plants, however (we have at least five or six such species in our own islands), are mere clumsy bunglers compared to the great and highly developed insect-eaters of the tropics, which

stand to them in somewhat the same relation as the Bengal tiger stands to the British wild-cat or the skulking weasel. The Indian pitcher-plants, or Nepenthes, bear big pitchers of very classical shapes (it is well-known that Greek art has largely affected India), closed in the early state with a lid, which lifts itself and opens the pitcher as soon as the plant has fully completed its insecticidal arrangements. In some kinds the pitcher ludicrously resembles a hot-water jug of modern British manufacture. The details of the trap vary somewhat in the different species, but as a whole the *modus operandi* of the plant is somewhat after this atrocious fashion: The pitcher contains a quantity of liquid, that of the sort appropriately known as the Rajah holding as much as a quart; and the insect, attracted in most cases by some bright color, crawls down the sticky side, quaffs the unkind Nepenthe, and forgets his troubles forthwith in a vat of oblivion prepared for him beneath by the delusive vases. A slimy Lethe flows over his dissolving corse, and the relentless pitcher-plant sucks his juices to supply his own fibers with the necessary nitrogenous materials.

The Californian pitcher-plant, or Darlingtonia, is a member of a totally distinct family, which has independently hit upon the same device in the Western world as the Indian Nepenthes in the Eastern hemisphere. The pitcher in this case, though differently produced, is hooded and lidded like its Oriental analogue; but the inside of the hood is furnished with short hairs, all pointing inward, and legibly inscribed (to the botanical eye) with the appropriate motto, "*Vestigia nulla retrorsum.*" The whole arrangement is colored dingy orange, so as to attract the attention of flies, and it contains a viscid digestive fluid in which the flies are first drowned and then slowly melted and assimilated. The pitchers are often found half full of dead and decaying assorted insects.

There are a great many more of these highly developed insect-eaters, such as the Guiana heliamphora (more classical shapes), the Australian cephalotus, and the American side-saddle flowers, and they all without exception grow in very wet and boggy places, like our own sun-dews, butterworts, and bladderworts. The reason why so many marsh-plants have taken to these strange insect-eating habits is simply that their roots are often very badly supplied with manure or with ammonia in any form; and, as no plant can get on without these necessaries of life (in the strictest sense,) only those marshy weeds have any chance of surviving which can make up in one way or another for the native deficiencies of their situation. The sun-dews show us, as it were, the first stage in the acquisition of these murderous habits; the pitcher-plants are the abandoned ruffians which have survived among all their competitors in virtue of their exceptional ruthlessness and deceptive coloration. I ought to add that in all cases the pitchers are not flowers, but highly modified and altered leaves, though in many instances they are quite as beautifully colored as the largest and handsomest exotic orchids.

The principle of Venus's fly-trap is somewhat different, though its practice is equally nefarious. This curious marsh-plant, instead of setting hocused bowls of liquid for its victims, like a Florentine of the fourteenth century, lays a regular gin or snare for them, on the same plan as a common snapping rat-trap. The end of the leaf is divided into two folding halves by the midrib, and on each half are three or five highly sensitive hairs. The moment one of these hairs is touched by a fly, the two halves come together, inclosing the luckless insect between them. As if on purpose to complete the resemblance to a rat-trap, too, the edges of the leaf are formed of prickly, jagged teeth, which fit in between one another when the gin shuts, and so effectually cut off the insect's retreat. The plant then sucks up the juices of the fly, and, as soon as it has fully digested them, the leaf opens automatically once more, and resets the trap for another victim. It is an interesting fact that this remarkable insectivore appears to be still a new and struggling species, or else an old type on the very point of extinction, for it is only found in a few bogs over a very small area in the neighborhood of Wilmington, North Carolina.

Strongly contrasting with the æstheticism of the artistically-minded bees, who go in chiefly for peacock blues and Tyrian purples, as well as with the frank Philistinism of the carrion flies, who like good, solid, meaty-looking red and brown flowers, is the ingenious secretiveness of the ichneumon-flies, who chiefly patronize invisible green blossoms, indistinguishable to a casual observer among the thick foliage in whose midst they grow. Most insects are very casual observers: they require a good sensible flaring patch of yellow or scarlet (like the posters of a country circus) to attract their giddy attention. But the ichneumons

are sharp-eyed and highly discerning creatures, which have developed a whole set of pale-green flowers, so inconspicuous as to escape the notice of color-loving bees and butterflies, yet with a good supply of easily accessible honey to reward their cunning visitors. This honey the monopolist ichneumons of course keep strictly for their own use. That large and very odd-looking English orchid, the tway-blade, extremely common in woods and shady places, though seldom observed by the general public on account of its uniform greenness, is an excellent example of these ichneumon-made blossoms. The whole spike stands a foot and a half high, with numerous separate green flowers, each about half an inch long, yet it is very little noticed save by regular plant-hunters, because its color makes it all but indistinguishable among the tall grasses and sedges with whose blades it is closely intermingled. Yet, if it were only pink or purple, like most of the other English orchids, it would certainly rank as one of the largest and handsomest among our native wild-flowers.

In a few cases, the relation between the plant and the insect that habitually fertilizes it is even closer and more lasting than in any of the instances we have yet considered. Everybody knows those large and handsome tropical lilies, the yuccas, with their tall, clustered heads of big white blossoms. Well, Professor Riley, the great American entomologist, has shown that the yuccas are entirely run (to use a favorite expression of his countrymen) by a comparatively small and inconspicuous moth, solely for its own benefit; and so completely is this the case, that the yucca can't manage to exist at all without its little winged intermediary. Professor Riley has, therefore, playfully named the little insect *Pronuba yuccasella;* freely translated, the yucca's bridesmaid. The moth bores the young capsule of the flower in several places, lays an egg in each hole, and then carefully collects pollen, with which it fertilizes the blossom, of set purpose, thus deliberately producing a store of food for its own future larvæ. The eggs hatch inside the capsule, and the young grubs eat part of the seeds, at the same time prudently leaving enough for the continuation of the yucca family in the future. As soon as the grubs are full-grown, they bore a hole again through the capsule, lower themselves by a thread to the ground, and there spin a cocoon which lies buried in the earth all through the autumn and winter. But in the succeeding summer, just fourteen days before the yuccas begin to flower, the grubs in their cocoons pass into the chrysalis stage; and, by the time the yuccas are in full blossom, they issue forth as perfect moths, and once more commence the fertilization of their chosen food-plant, and the laying of their own eggs. So singular an instance of mutual accommodation between flower and insect is rare indeed in this usually greedy and self-regarding world.

The extremely odd, inside-out, topsy-turvy flowers of the fig owe their fertilization, however, to a still more extraordinary and complicated cross-relationship. Hardly anybody (except a botanist) has ever seen a fig-flower, because it grows inside the stalk, instead of outside, and so can only be observed by cutting it open lengthwise. The fig, in its early youth, in fact, consists of a hollow branch on whose inner surface a number of very small flowers cluster together; and, when they are ripe for fertilization, the eye or hole at the top opens to admit the insect visitor. This visitor is the fig-wasp, who comes, not from other cultivated fig-trees, but from a wild tree called the caprifico. On this tree the mother wasps first lay their eggs in the inedible figs, which thereupon swell out into galls, and become the nurses of the young wasp-grubs. When the wasps are mature, they eat their way out of the wild fig where they were born, and set forth to lay their own eggs in turn, either on a brother caprifico or on its sister, a true fig-tree. Those wasps which enter the wild figs of a caprifico succeed in carrying out their maternal purpose, and lay their eggs on the right spot for more grubs to be duly developed. But those which happen to go into a true fig merely fertilize the flower without laying their eggs, because the figs are here so constituted that there is no proper place for them to lay on. In other words, the true fig is a cultivated wasp-proof caprifico. But, as the figs won't properly swell without fertilization, it becomes important to conciliate the attentions of the wasps; and for this reason the Italian peasants hang small branches of the caprifico on the boughs of the cultivated fig-trees, at the moment when the eye of the fig opens, and so shows that they are ready to be fertilized. The wasps, as they emerge from their own homes, enter the figs at once, and there set the little hard seeds, on whose impregnation the pulpy part of the fig begins to swell. The fruit of the caprifico itself never comes to anything, as it hardens and withers on the tree; but, since the true figs are dependent

upon it for pollen, it follows that, if the caprificos were ever to become extinct, the supply of best Eleme in layers would forthwith cease entirely.

Cornhill Magazine.

TEACHING WRITING.

BY THOMAS BAGOT.

THE following are probably the principal criticisms to be offered on the methods of teaching writing at present in vogue in country schools.

1. The pupils are not supplied with the proper materials.

2. They do not receive enough practice in preliminary work, including position, holding the pen, movement, etc.

3. They seldom possess a clear conception of the work they are required to do.

4. Letters are made as isolated individuals, and the importance of slant, relative height and width, etc., is disregarded.

5. The work is not arranged in a progressive and systematic manner.

6. Mistakes are allowed to pass without correction until the pupils have contracted erroneous habits in writing.

7. Too much time is spent on the analysis of the letters and not enough in trying to make them correctly.

8. Slate work is carried to an extreme.

9. Neatness in the general appearance of the work is too much neglected.

10. The use of engraved copies is carried too far in many schools.

I present substantially the method of teaching writing employed in the schools of this county at the present time, believing it to be in a measure free from the objectionable features named, and feeling that the good accomplished through it will justify me in putting it forward.

Every pupil upon entering school for the first time is required to bring a slate and long pencil. At the beginning of the second year, in addition to the slate and pencil he must be supplied with a writing book, scribbling paper, pen, ink, pen-wiper, blotter, etc.

After no small amount of drill on position of body, arm, slate or paper, pencil, etc., simple movement exercises are practiced, these gradually giving way to others less simple.

All copies are written upon the blackboard at first, the teacher constructing each form in the presence of his class and calling attention to the common errors made. The pupil soon builds the ideal form in his mind and strives to give his ideal conception a local habitation on the slate or paper.

The staff containing six horizontal lines about one-sixth of an inch apart, is ruled cross-wise at the top of the slate. The base-line is somewhat heavier than the others and is thus the most prominent. A straight line is also drawn from the upper right-hand corner of the slate to the lower left-hand corner, by which to determine the slant of the letters.

The teacher begins the regular line of work with the straight line on the proper slant, and the pupils practice on this, and nothing else, until they can make it reasonably well. He then takes the right curve and treats it the same way, after which the pupils practice uniting the two elements, and form with them the letters *i* and *u*, which they next practice writing together. The left curve is next taken up, and as soon as the pupils become moderately proficient in forming it, they are taught to combine it with the two elements already learned, in letters composed of the three, such as *n*, *m*, *a*, etc. Two or more of the letters learned are next combined into a word, as for instance, *in*, *an*, *am*, *man*, etc., and new words are formed accordingly as new letters are learned. At first it is best, perhaps, to allow these elements and letters to extend through two of the ruled spaces on the slates. Only one thing is attempted at a time, and this must be done satisfactorily before the next is presented for consideration. Some pupils who began writing three months ago can now write five or six short words, and they can write them well, too.

No mistakes are allowed to pass without correction. The principal errors are pointed out by the teacher, and the method of correction generally given on the blackboard. It is much easier to avoid a bad habit than it is to get rid of it after it is contracted.

No attention is paid to analysis during the first year, and very little during the second. The pupils know the elements as mere forms, and see that letters are nothing more than combinations of them, but they know nothing about their names or their numbers.

During the first year the writing exercises are all on slates, during the second year about half of them are in writing books, and after this nearly all the regular exercises are in the writing books.

Neatness of work is made a prominent object from the beginning. Instructions

are given as to ruling the slates and placing the work on them, and pupils are required to keep their writing books free from blots, scribbling, and everything of the kind.

The engraved copies are placed on the blackboard by the teacher, and every difficult point carefully noticed. The pupils have a desire to do what they see the teacher do, and what they feel that he takes an interest in having them do well, they endeavor to do well. The pupils generally write the copy a few times in their practice books before they begin to write it in their regular copy books. *Indiana School Journal.*

GIRARD COLLEGE WORKSHOP.

WHAT may prove to be another stimulating event in the important series leading on to mechanical and other industrial training shops attached to our public schools, says the *Phila. Ledger*, of December 9th, took place at Girard College. This was the formal opening of the workshop in which the college boys are to be taught how to handle and to use mechanical tools, so that when they go out to the work of life they will be in an advanced condition as learners of trades, and for that reason desirable boys for mechanics, manufacturers, and others to take into their establishments. The building provided within the college grounds for this purpose by the Board of City Trusts is a substantial edifice, ample for a beginning on a rather large scale; and fairly equipped with benches, tools and machines for bringing the boys well forward in the use of the hammer, cold chisel, file, planing machine, drill, lathe, etc., in metal work; and planes, saws, chisels, mallets, lathes, etc., in wood work. There is room enough in the shop building, and tools enough, for fifty boys; and as four sets of fifty may get instruction in an eight or ten hour day, the three or four hundred boys in the college old enough for such training can have a chance in the shop at least twice a week.

It was very gratifying to the large company present to see this fine workshop with its large capabilities ready for use. It is the fruit of seed planted twenty or more years ago. So far back at least, possibly farther, there were those among the old Boards of Directors of the college who were mindful of what Girard said with regard to the orphans who were to be the beneficiaries of his college. They were to be instructed "in the various branches of a sound education," to which he added: "I would have them taught *facts and things*, rather than words and signs." Directors of this way of thinking tried to have handicraft instruction introduced into the college curriculum.

Several of those former Directors were present yesterday, among them Richard Vaux and Gustavus Remak, who advocated mechanical training in the college, and did for a while succeed in introducing printing, photography, and possibly other handicrafts. But in those old times, and even in times much nearer to the present, there were but few persons ready for a step so far in advance of the prevailing notions of the day for the conduct of colleges and schools. So the plan failed to get a good foothold. It was not abandoned, however, and from time to time the effort has been renewed. It was unfortunate for the pioneers in these essays that they did not have the advantages which helped the one that was brought in such promising form to the notice of the public yesterday. Their exhortations fell for the most part on unsympathetic or unready ears; men were not so pressed by the urgent necessities of the movement as they are now; the Russian mechanical training system shown in such convincing style at our Centennial Exhibition had hardly been known here; there had been no such practical demonstration of useful results in our city as that exhibited in the plain, unobtrusive cellar workshops of the Spring Garden Institute; and, finally, in the earlier days there was no such large surplus in the revenues of the Girard Estate as that which has been available for this purpose in recent years.

Many conditions combine to make more successful now the efforts which fell short of full fruition in former days. Now every condition is favorable, and the seed planted so long ago has come to the promise of good fruit. In their endeavor to bring out of this college workshop all the good of which it is capable for the Girard orphan boys, the Directors of City Trusts are entitled to the fullest encouragement and support of the public; and the more especially, as it may be made an invaluable exemplar for what must be done some time in our public schools. There are eleven hundred boys in Girard College; there are fifty thousand in the public schools. The following is the local report of proceedings:

The formal opening of the Technical School of Girard College, in the new and spacious building erected in the northwest corner of the grounds, took place December 9th. Wm. H. Drayton, Esq., Chairman of the Committee on Technical Instruction, delivered the completed

work to the Directors of City Trusts, and Alexander Biddle, Esq., President, received it on behalf of the Board. The machinery was then set in motion, and the new school was formally opened. The Directors of City Trusts, the officers of Girard College, and upwards of two hundred and fifty invited guests, assembled in the Directors' room in the main building, shortly after two o'clock.

At 2:30 o'clock the company formed in line and proceeded to the new Technical School building, preceded by the Girard College band. On the way, the pupils of the college, ranged in double line, were reviewed. When all had assembled within the building, Mr. W. H. Drayton, in a formal address, delivered the completed work to the Directors of City Trusts. In opening his address, he narrated the events which finally convinced the Directors of City Trusts that educational workshops are necessary and essential to the proper training of the boys in their charge. A few tools were purchased and a temporary workshop fitted up in the basement of one of the buildings.

"Within a year after we began to teach, our boys who were old enough to leave us had learned to use various implements so neatly that in almost every case they found work at once in factories and workshops and with master mechanics, at living wages, not from kindness or humanity to orphan boys, but because they were worth having as workmen. Our workshop, cramped as it was, had accomplished so much that we felt warranted in establishing this branch of teaching as a part of our course. Our accommodations have been so insufficient that the boys were only taught to work in cold metals, and in these they were limited to the hammer and chisel, the lathe, the planer, and the drill; forging, brazing, and soldering, were beyond our reach, and we feared as a beginning even to venture upon carpenter work, with its variety of tools and articles of manufacture. But here in this new and extensive building, we not only propose to teach the boys to use many more varieties of tools in metals, but we have in our unfinished building, within the last two months, introduced instruction in carpenter work, and if we meet with success in this, as we are confident we shall, it will soon be followed by forging and brazing and soldering; and this again by careful instruction in mechanical drawing.

"We wish it to be understood, we do not undertake to teach trades or to train master mechanics. Profiting by the great amount of thought which educators have given to this subject, we have heretofore proposed, and still propose, to do no more for our boys than to teach them to handle the various implements of trade skilfully; but to teach our boys specialties, much as we would desire to do, so is both beyond the scope of our trust, and, even if within it, could hardly be accomplished at the early age of eighteen years, when, under the terms of Mr. Girard's will, the boy must leave the institution."

Mr. Drayton then spoke of the technical training schools of Europe, and urged that similar schools should be established in connection with our public educational system. To this end he suggested that the public lands not yet disposed of should be set apart for the support of a comprehensive system of mechanical and art education. In conclusion he handed over the Technical School to Mr. Alexander Biddle, the President of the Directors of City Trusts, who, on behalf of the Board, expressed his acknowledgment of the faithfulness with which the committee had discharged their duties. Referring to the purposes for which the new school had been instituted, he said that this industrial teaching would in no wise conflict with the course of instruction required by the terms of Stephen Girard's will. The latter would still be carried out fully with this needed addition. A clause in Girard's will, represents the great benefactor as preferring "facts and things rather than words and signs," and the Directors of the Trust felt that in this school of mechanical industry they were giving force to the testator's wishes. This instruction in technology would not be compulsory on the students. All the boys, however, will be given a chance.

At the conclusion of President Biddle's remarks the company passed to the engine-room, in the basement annex, and Mr. Biddle pulled the lever of the Corliss engine, and the machinery was set in motion. Immediately the boys, about 300 in number, went to work upon the various objects in metal and wood allotted to them by their instructor, Supt. T. M. Mitchell. The officials and their guests spent an hour in the inspection of the new building and its equipment, and in observations of the busy scene in the shop.

The new Technical School building is located at the northwestern extremity of the College grounds. It is built of stone, two stories in height, with annexes on the north side below the ground level, in which are the 60-horse-power Corliss engine and a battery of eight boilers. These latter not only furnish the necessary steam for the engine, but also, through a duct of 2600 feet long, supplement the old boiler-house in providing heat for the various buildings on the grounds.

The dimensions of the new building are 50 feet in width by 150 feet in length. The first floor is fitted up as a workshop, with lines of shafting, numerous driving power tools, and machinery for metal and wood working. The plant includes pattern makers' lathes, band and gig-saws, a rip or circular saw, drills, screw-cutting lathes, slotting machine, planing machines, shaper machine, grindstones, twenty double benches for pattern making, carpentering and wood carving, and forty-eight vises. The second floor will be used for mechanical drawing and lectures. The boys will be given three or four hours' instruction each week in the use of tools.

The Committee of the Board of City Trusts, to which was assigned the duty of erecting and equipping the new Technical Building, comprised the following Directors: William H. Drayton, John H. Michener, Louis Wagner, James Campbell, Richard Vaux, James R. Gates, George H. Stuart, William B. Mann, Joseph L. Caven.

INCIDENTAL.

THE remark in a late number of the *Ohio Educational Monthly*, that "while the old fogies in Ohio are questioning the value of these three agencies"—that is, township school districts, the county superintendency, and State Normal Schools. —"Pennsylvania is reaping their results in improved schools and steady progress," reminds me of some experiences in March, 1861, in the newly-discovered Mecca oil field in eastern Ohio, just over the Pennsylvania line.

Whilst exploring the region for geological and economic purposes, I sometimes availed myself of the courteous hospitality of the nearest farm-house when night came on; and the vicinity of a school-house on two occasions, brought the subject of education into the current of fireside conversation in the evening—not for argument or controversy, but on both sides as a matter of passing information.

My entertainers were fair average specimens of Western Reserve intelligence and practical judgment, dispassionate and apparently free from prejudice. They seemed somewhat surprised to learn the real status and advancing progress of Pennsylvania in common school affairs, but were favorably impressed by our organization and methods; and very frankly expressed a decided preference for our county superintendency, as explained, over their boards of county examiners, who remain at the county seat, and never visit schools. Township districts were outside of their traditions and experience, but the theory and advantages were conceded in the main, coupled with the suggestion, however, that if such a change was made in their policy, it might take some time to get their people accustomed to its workings.

Where schools are the private property of the teachers who manage them, and their patronage depends entirely upon their own qualifications and efficiency, the where and how of their professional training is pretty much their own affair; but my hosts admitted another principle governed when teachers were merely employees under an organized state system. They saw the policy and conceded the duty of the State, based upon self-interest, to provide by public authority for the due training of its own teachers; but the troublesome question behind it all, they thought, was one of ways and means.

These expressions of opinion on their part were evidently candid, and not prompted by mere courtesy. They knew me only as a wayside guest, speaking as a private citizen of the state from which I came. But the point of the incident is this: The subjects referred to are of a very practical character, that have been demonstrated by more than twenty years of experimental success since that period. If they thus commend themselves to the judgment of practical men when casually presented in a quiet conversational way, might not public opinion be won over to the cause in our neighboring State, if its advocates would do as the politicians do, go upon a still hunt in every neighborhood, and gradually educate public sentiment up to the point of legislative action? It would be slow, but ought to be sure in the end. There seems to be noother way.

This would be the reverse of our own policy here. Falling back upon the theory of the constitution that the Legislature is the law-making power, we enacted our school laws first, and brought public opinion up to their support afterwards. And it was a success, owing to the steadfast character of our people, and the admirable adjustment of the checks and balances of government under our constitution. H. C. H.

TEACHING BY ILLUSTRATION.

LEFT to themselves, children always generalize first and analyze afterwards; first examine an object as a whole, and then, if it is anything that can be handled, pull it to pieces to see what it is made of, and how it was put together.

This underlying fact embodies the entire philosophy of the word-method of teaching the alphabet, and furnishes an unerring principle to guide the teacher in reaching the understanding of the pupil with any other subject by logical and successful methods, that will be successful because in harmony with the laws of mind, and the nature of mental processes, as they have been established by the Creative Mind of which they are an emanation and a type.

In this connection, how wonderful an agent is the physical organ of vision as an avenue to the eye of the mind, to impress ideas there before the otherwise blind symbol effects its lodgment in the memory; securely held there because *understood*, and therefore incapable of being forgotten, whilst an unmeaning symbol or unintelligent sound that conveys no idea, will be equally incapable of more than transitory remembrance.

Hence the utility and indispensableness of illustrative apparatus for children in every school where anything is taught that can be thus illustrated. In all such cases demonstration is always better than theory, seeing better than imagining, or vainly trying to imagine, the practical and concrete better than the abstract and ideal.

The dullest pupil, the most unimaginative child—and there are many such—can understand and remember weights and measures and geometric figures, if the things themselves, a pound weight, a quart cup, a two-foot rule, a cube or a cone, and presented for him to see and handle, when he first gets their name and uses, and much time be saved and mental vagueness and uncertainty avoided, that oftentimes result from the presentation, orally or in print, of names and tables and divisions without so simple and obviously proper an exhibit; an exhibit that is the most natural and sensible thing to make. This is only one illustration out of many similar that could be given. How very much quicker and better is geography understood where globes and raised maps are in use, than where they are wanting! Why should they not be in every school, everywhere, in use by every teacher, and furnished by every school board? Patience! It will be so some day. Slowly, though by unequal steps, the world is "inching along." Good methods and right policies are everywhere spreading, from centre to circumference, and make school children brighter and happier with every beneficient advance.

Brighter minds and more pervading intelligence will be the result of practical work on Nature's plan; an intelligence "that will permeate and vitalize society, yet not rise above or despise its average vocations." Common sense will be its prevailing characteristic, because of common sense teaching; and empiricism and shallow pretence must vanish before it.

EDITORIAL DEPARTMENT.

THE SCHOOL JOURNAL.

LANCASTER, JANUARY, 1885.

E. E. HIGBEE. - - - - J. P. McCASKEY.

A NOTABLE event in current affairs is the appearance of the first annual report of James MacAlister, Esq., Superintendent of the public schools of the city of Philadelphia, and the first superintendent they have ever had; a pamphlet of 122 pages, including the tables and appendix, the report proper occupying 85 pages. It is a lucid and interesting narrative of his official experiences during the ten months he has been in the office, and presents with kindly tone, but photographic accuracy, the condition of the schools as he found them. It leaves no room to doubt the necessity for professional supervision and reform, but so presents the subject as to make the co-operation and support of teachers and the public a logical and inevitable result. It is a document of more than passing interest, and we may refer to it again. In the logic of events, it may prove to have been worth waiting twenty-five years to commence the superintendency in that city with an officer so thoroughly equipped, and personally so well suited to the work.

THE Girls' Normal School building, a huge and imposing green stone edifice at 17th and Spring Garden streets, Philadelphia, cost, with the recent annex, $191,000, and was built and furnished entirely at the public expense. The furniture and apparatus cost an additional $35,000. Not a dollar of money by private subscription ever went into it for any purpose. There are over 1,100 pupils on the roll, young ladies studying to become teachers, and nearly 600 boys and girls in the two schools of practice. Tuition and supplies, including text books, are free. There are 30 teachers employed, and the institution is supported at an annual expense of about $34,000, all paid by appropriations from the city treasury, upon the same principle that grammar and primary schools are provided for, namely, that they are all essential parts of any rightly organized public school system. This is undoubtedly the true principle, and wherever circumstances permit, the practice should conform to the theory; and when it cannot be done, the tendency and movement should be, for obvious reasons, in that direction.

A STUDENT asked Ruskin, "What is the good of second-rate art?" "I am glad you asked me that question," replied the pro-

fessor. "Fifth-rate, sixth-rate, to a hundredth-rate, art is good. Art that gives pleasure to any one has a right to exist. For instance, if I can only draw a duck that looks as though he waddled, I may give pleasure to the last baby of our hostess, while a flower beautifully drawn will give pleasure to her eldest girl, who is just beginning to learn botany, and it may also be useful to some man of science. The true outline of the leaf shown to a child may turn the whole course of its life. Second-rate art is useful to a greater number of people than even the first-rate art—there are so few minds of a high enough order to understand the highest kind of art. Many more people find pleasure in Copley or Fielding than in Turner. Most people only see the small vulgarisms in Turner, and cannot appreciate his grander qualities."

THOSE persons desiring to plant forest trees over any considerable area, or in any number whatever, or those wishing to procure seeds, may address with full confidence Mr. Thomas Meehan, Germantown, Philadelphia. The firm of which he is a member has for thirty years been in the business of contracting for forest-tree seeds and seedlings, and is widely known on both sides of the Atlantic. He himself is an "authority."

IN discussing, before the Lehigh County Institute, the matter of school direction and the necessity for the more general organization of central high schools, Dr. A. R. Horne is reported as follows:

Among the various duties of school-directors that of grading the schools properly should be especially emphasized. In rural districts there should be a high school in every township. Facilities of this kind, for affording opportunities to young men and ladies to obtain a higher education should be brought to the doors of families. Not one in a dozen can ever expect to enjoy the privilege of going to a high or a normal school at a distance. The old line academies did excellent service, such as cannot be supplanted by Normal Schools and Colleges. In my experience twenty-five years ago, when I had my school at Quakertown, there came to me such men as Dr. Jno. S. Stahr, now of Franklin and Marshall College, Supt. R. K. Buehrle, of Lancaster, Supt. L. B. Landis, of Allentown, Supt. J O. Knauss, of this institute, Supt. G. W. Weiss, of Schuylkill county, and others, some of whom walked four to six miles every morning and evening, and borrowed the money to pay for their tuition. These men, and thousands like them everywhere in country districts, would never have received an education and risen to their positions of eminent usefulness had it not been for the opportunites they had right at home. The school was brought to them. This is but one illustration of the many that could be given to show the importance of presenting opportunities to the young for obtaining a higher education at home. Kutztown, with its excellent Normal School has reached within a radius of five miles of the school, at least fifty young men, who are now prominent as educators and professional men, and who would never have obtained a higher education if this Normal School had not been at their doors. Every ownship in Lehigh county should have a good central high school, free to ll the more advanced scholars of the township. Keep your young people at home as long as possible.

THE *American*, in commenting upon the subject of religious instruction in the schools, takes this rational view of a matter of very grave importance:

The Superintendent of Public Schools in New York, in reply to questions as to the religious instruction given in those schools, has announced publicly that there is no place for such instruction in the system he is administering. In his view, the right of religious equality guaranteed to all the people of the State, forbids the introduction of subjects on which the people of the State are divided. If this gentleman desired to administer a severe blow to the public school system, he could not have done this more effectually. The most powerful enemies of that system in this country, are those that insist that the formation of character is more important as a branch of education, than even the information of the mind on subjects like science or history; and that the religious motive can not be dispensed with in moral development. If, as they justly reason, the State is debarred from introducing the most important of all topics, and the most effective of all motives, in its training of the young, then that training must be developed upon some other body than the State. In point of fact there is no great difficulty in introducing into our public schools a religious instruction both ample and definite, as is done in the board schools of England. After all, the people of America, with the exception of a small minority, are agreed on the important points of religious teaching. They think, with Professor Huxley, that it would be a cardinal mistake to omit the Bible from the schools, as though it were a sectarian book, or even exclusively a church book. They all are agreed as to the merits of the Ten Commandments and the Lord's Prayer, and with few exceptions they could unite on the Apostles' Creed. These three form the basis of catechetical instruction in the Christian church in all lands and of all ages; and if there be any parents who do not wish their children to be taught these, they might be permitted to withdraw them, as is done in the National Schools of Ireland, at the time appointed for this teaching. The late Professor Maurice prepared an admirable manual for instruction of this kind, which we believe is largely used in the "Board Schools" of Great Britain.

FIFTIETH ANNUAL REPORT.

THE annual report of the Superintendent of Public Instruction, published in this number of THE JOURNAL, completes the first half century of the Pennsylvania Common School System; a system that has progressed by gradual stages from the nebulous, the jelly-fish, and the vertebrate types of existence, into the robust and productive fruitfulness that now so largely characterizes its operations, and in which all patriotic citizens may well rejoice.

But with all that has gone before, we do not yet find any halting place where we can fold our hands, and take our ease, and rest content with what has been accomplished. We have only reached high vantage ground from which to see more clearly what lies beyond, in what direction next to move, and how much more remains to be done, of still greater moment in the future.

We need, not to weaken or supplant, but to enlarge and strengthen the organized machinery of the system, by supplementing it, on one hand, with co-operative agencies that shall come into closer and more influential relations to the schools; and, on the other, make clearer and brighter the mental life of the school-room by sustaining with a firm policy, and systematically liberal hand, the sources of supply from which our teaching force must come.

Our school system has been created, not for a single neighborhood, nor for a year, or a decade, or even a century, but for a great Commonwealth, and for all coming time. A narrow, superficial, or temporizing policy is therefore not the best for either our immediate interests or future wants; nor would it be in harmony with or fulfil the purposes of the constitution, or the laws that have thus far been enacted under it.

In dealing with organized government, of which our school system is a comprehensive example and illustration, it is the part of wisdom and true statesmanship to keep in view its entire scope and logical tendencies, and mould the legislation of the times by the light of accumulated experience, and the permanent needs of the present and the coming generations. It is in that spirit, and from that standpoint, that the recommendations made have been conscientiously and hopefully submitted, and from an earnest conviction of their soundness and practicability.

Of the necessity of some such provision for our educational interests there can be no doubt; and as "in the multitude of counselors there is safety," with the collective wisdom and judgment of the Legislature the solution of these current educational problems constitutionally rests.

THE FORESTRY INTEREST.

GOVERNOR PATTISON ON THE NECESSITY OF PLANTING TREES.

THE address of His Excellency, Governor Pattison, before the Farmers' Institute of Lancaster county, is of general interest throughout the State, from the very forcible manner in which the forestry interest is presented. We have not elsewhere seen the strong points in the subject so well stated in a few brief paragraphs. After reviewing the agricultural statistics of the county above-named, the Governor said, and we commend his thoughtful remarks to the consideration of our readers, whether teachers or school officers:

"One of the lessons to be learned from the facts disclosed by the last census, is the great and growing importance of the forestry interest. It is not too much to say that even now there is no direction in which you may look for more profit and more steady and increasing returns from money and labor invested. Year by year our forests are depleted to supply the constantly-increasing demands of civilized life, yet little is being done to replace them. Soon the scarcity of timber trees will advance the price, and the man who now plants trees for the future leaves a fortune to his children, and a benefaction to the community. The figures tell the story: 700 millions of dollars for forest product, against 679 millions for corn, 475 millions for wheat, 300 millions for cotton, 150 millions for hay, 60 millions only for gold and silver, 94 millions for coal, and a total of 280 millions for all other minerals.

"Is it not well worth your while as farmers to consider an interest of such magnitude as this? Where does all this wood go? Into our houses and fences; into railroad ties—trees are not fit for them till they are thirty years old, and the rest of the tree is often left to decay, counted not even worth hauling away. You have all seen the Susquehanna covered with rafts of lumber, on their way to help supply this enormous demand. Year in and year out the woods are being cut away, and already we hear of the coming scarcity. The demand will increase—the railroad ties must be renewed every seven years from thirty-year-old trees; and

if we propose to supply our own country, we must begin now, and should have begun long since, to preserve and renew the forests. Pennsylvania made an attempt in this direction in 1879, in the act to encourage the planting of trees along roadways, for which an abatement of road tax was allowed; but we need more than that. It will require constant attention from the farming interest to keep up the supply of forest trees. We must plant every year. Other nations and states have begun to move in this matter. Our neighbor republic, Mexico, offers premiums for the continuance and extension of wooded tracts; and if they can afford to do this, how much more necessary is it for us?

"We are now a nation of fifty millions, and no man can tell how many we shall be in another century: it is our duty to provide timber for our posterity, if only for the protection of our children—for if we do not make such provision now, they will be compelled to import from wiser nations, at enormous cost. We cannot afford to miss or longer postpone this pressing need; therefore let me urge upon you, farmers of Lancaster county, to take the thought of this forestry question home with you, and by reflection upon it, form plans and put them into practical operation before another year has passed; and when you come to the next Farmers' Institute, let us have the benefit of your thought and experience. The more the man behind the plow thinks, the better for him, and for free institutions; and this is one of the questions where thought matured into practical application will be of incalculable value to future generations."

FIGURES FROM THE REPORT.

THE School Report for 1884, shows that we have in Pennsylvania 19,919 public schools, of which number 8,345, nearly 42 per cent., are graded schools; thanks to our district system, and the unlimited control over the grading, classification and course of studies, conferred by law upon school directors—a grant of power, and a range of territorial jurisdiction, that are *sui generis*, and admirably adapted to the self-developing end in view. There was an increase of 448 in the number of graded schools during the past year. This is indeed progress, and shows how the people are continuously reaching out, year by year, for better and truer educational facilities for their children.

The entire number of school districts in the State is 2241, an increase of 14; the increase in the number of schools is 377, of graded schools, 448; number of Superintendents 108, an increase of 3; male teachers, 8,559, decrease of 41, female teachers, 13,905, an increase of 491. The average salary of male teachers per month, $38.47, increase of $1.44; of female teachers $29.39, decrease of 66 cents. The number of pupils in attendance during the year was 966,039, an increase of 8,359; cost of tuition, $5,403,636.41, an increase of $209,944.67; cost of building, purchasing, renting, fuel, contingencies, etc., $4,059,585.40; total cost of system, for the year, $9,463,221.81. The estimated value of school property is $31,886,098. The average length of school term in months was 6.74. Amount of tax levied, $6,313,832.98. These are large figures, but they represent an interest of vast importance in the Commonwealth.

SCHOOL GEOGRAPHY—II.

FIRST LESSONS.

IN a preceding article a large share of the blame for the unattractive character of school geography has been thrown upon the text-book. Condensed into a series of short answers to a series of questions, a subject naturally the most attractive of all the subjects taught in our common schools, is presented to children in a form so uninviting, that it is fortunate for them if, instead of mere indifference, they do not conceive for it a positive dislike. The only effectual remedy for this evil is to discard the text-book, or, at least, to give it a very subordinate rank among the means of instruction. Let the teacher be provided with a globe and maps, and with such other apparatus as he may require; give him a school library of selected books, particularly books of travel, from which to draw information and to which to refer his pupils; let him fill himself with his subject, and let him take the teaching into his own hands.

As our schools are usually equipped, however, this plan of personal instruction, as it might be called to distinguish it from the mere hearing of recitations, cannot well be put into practice fully. It would require, too, on the part of most teachers, an amount of preparation which cannot fairly be demanded of them. But the more nearly the teacher can approach in practice this ideal method—the more of his own per-

sonality he can put into his teaching, and the less reliance he places upon lessons given to be memorized—the greater will be the interest he will arouse among his pupils, and the more efficient will be his work.

The first lessons, at any rate, should be given without a book. The apparatus required for this purpose is so simple, and the topics to be treated are so familiar to every teacher, that a course of oral teaching for beginners is entirely practicable, and it will be found upon trial to be not only far more interesting to the pupils than the usual course of book lessons, but much more enjoyable for the teacher. It is the purpose of this article to make a few suggestions in this direction—to outline roughly a course of "first lessons," filling in a few details, to illustrate the manner in which the topics may be handled.

The chief difficulty which will be encountered in arranging a course of lecture, or, rather, conversational instruction, will be to find work for the pupils when not in the class, that is, to supply the place of the usual study. One expedient out of a number which will suggest themselves, when once the plan has been put into practice, is to require the pupils to write each day, after the lesson or class work is over, a report of what they have learned, to be read and commented upon as a part of the next day's lesson. This exercise, besides giving them work and affording a test of the amount of attention which they have given to what has been told them or shown to them, has the additional value of being the very best training that can be devised in the use of language.

Let us now suppose, for the purpose of illustrating this method, that we have before us a class of beginners, full of anticipation, as school children usually are upon entering the untried field of a new subject, and eager for their first lesson. They already have a vague idea of what geography is. "It is all about the world." But what is the world to them? Before we begin our teaching it is well to examine them carefully with a view of ascertaining with what sort of conceptions their minds are already filled. What ideas have they about the earth, the sun, the moon, the stars? What are their ideas of places of which they have heard—of Philadelphia, of New York, of California? Have any of them ever seen the ocean? What ideas have they of distance? How long would it take a person to walk a thousand miles? The mind of a child is by no means a blank upon which we can inscribe whatever we choose without first erasing something which is already there. He has to *unlearn* as well as to *learn*, a point which teachers are too apt to overlook. He needs our assistance to disabuse his mind of a host of provisional ideas due to his limited observation and lack of experience, and we cannot give him this aid unless we can succeed in placing ourselves for the time upon his level and can see things as he sees them. Unless we continually do this, there is risk that our simplest expositions will often be to him only half intelligible.

When by means of the preliminary work we have come to understand our pupils, we are ready to begin our teaching; and we will begin, as is usually done, with an account of the earth's form and size and its relation to other bodies in space. The plan of beginning with local geography, leading the pupil, as is sometimes said, "from the known to the unknown," familiarizing him with geographical terms, illustrating the nature and use of maps by drawing plans of the school-room or school-yard, studying actual hills and valleys and moulding them in the school-room—this plan, although now strongly recommended as the best preparation for the study of structural geography, seems to have the disadvantage of leading us by too long and circuitous a route to our main subject. We have promised our children to tell them about the earth and its wonders, and the sooner we can get at this work the more securely we shall hold their attention. It involves, too, a complete change of system for the great majority of teachers, to whom we hope in these articles to make some suggestions which will be fruitful of results.

To tell children that the earth is an immense ball—or, as the statement is more often made, that it is round *like* a ball—and that it is about twenty-five thousand miles in circumference, makes but a very faint impression on their minds. While they may be able to answer correctly the question, "What is the form of the earth?" they do so with no clear conception of the reality. The idea does not enter into their consciousness in its full breadth and volume. They may still continue to think of the earth as they see it, as an indefinite expanse of plains and hills surmounted by the blue dome of the sky; and they may still exercise their fancy in imagining what the "ends of the earth" are like. To combat successfully the testimony of their own senses, we must do more than tell them; we must show them. We must hold the

earth up before their eyes and let them see it, or, since we cannot do this actually, we must do it symbolically. We have a ball of a convenient size, which we hold, not in the hand, but suspended by a fine cord. The more nearly invisible is its support, the better will it represent the ball of the earth floating in space. We cause it to revolve slowly, to illustrate the earth's daily revolution, and at the same time carry it along in its imaginary path around the sun.

Questions by the pupils are always in order. It is more than likely that at this point we shall encounter a question which, unless we are prepared for it, will be a little perplexing. "Why don't the earth fall?" Experience teaches that things fall when they have no support, and why should the earth form an exception? This question is a good sign; it is evidence that the questioner is thinking. But it is useless to try to answer it directly. If we attempt to explain what falling is, and that the earth really does fall, that it falls around the sun, we shall only put the mystery into another form. But we can appeal to a counter phenomenon which will help us out of our dilemma. The moon is, like the earth, an immense ball floating in space. We are accustomed to see it in the heavens high above our heads, without any visible support, yet no one ever thinks of the moon's falling. Indeed, contemplated from this point of view, the moon is an excellent medium for conveying to the mind of a child a clear conception of the earth's character as a planet.

In treating of the earth's size, the aim should be to give an impression distinct and, so to speak, tangible. We cannot do this with mere numbers of miles. Size is relative; magnitudes can only be comprehended when we can see them, at least mentally, by the side of some magnitude taken as a standard. Units of time are often employed advantageously to assist us in grasping, mentally, immense distances. We might aid our pupils in calculating the time it would take a person to walk around the earth, if no seas divided the lands. But a more striking illustration of its vastness is this: Suppose the earth, with everything upon it, were to contract its dimensions until it became only *one mile* in diameter. It would still be a huge globe, but not so large that we cannot imagine how it would look at the distance of one or two miles. We will give the children time to imagine how such a stupendous ball would appear. Now, how large do they suppose a man, proportional in size to this miniature earth, would be? He would be an object so minute—less than the one-hundredth part of an inch in height—that it would require the closest search to discover him with the naked eye. To find a small child we should certainly have to use a magnifier. Before a class this illustration can be presented far more strikingly than here, and it gives in a single impression an idea of the earth's vast size, which the bare statement of its actual diameter in miles does not give. Is it any wonder that so small a creature cannot see that the earth is round?

The sun, moon, and stars do not properly come within the limits of our subject. But we will not be too strict in our definition of geography. Let us remember that it is in the geography class that the great majority of our children receive all the instruction they are ever to receive about the world they live in. While we are treating of the form of the earth and its relation to the sun, we are so close upon the domain of astronomy that we will cross the border a little way, and will unfold to our pupils some astronomical truths of every-day interest. We will try to give them some idea of the size of the sun, and its immense distance from us; will say something about the moon and the planets, especially those two very interesting planets, Venus and Jupiter; and, finally, those objects of wonderment, the little twinkling stars, will be presented in their true character as suns, whose light is so faint as it is, only because they are so very very far away.*

These topics will afford material for a number of "lectures." If they are treated with the proper vividness of presentation and aptness of illustration, they will leave upon the minds of our pupils impressions that cannot easily be effaced. And here it may be remarked that it is best to use but a single illustration of each point, one which the pupil will always recall as in some sort a symbol of the reality. Thus having decided upon the best illustration of the earth's size, do not cause confusion by an alternative illustration.

Work with the globe comes next. A small globe, without too many details and

* It seems strange that this subject is so generally neglected in our common schools. While children are taught the names and localities of lakes and rivers and mountain peaks, which they will never see, and which can never have for them any particular interest, the familiar heavenly bodies are passed in utter silence. We shall recur to the subject in a future article.

mounted in the simplest manner, is the best. We have already treated of the earth's diurnal revolution and of its passage around the sun; we have now to explain the seasons. The globe, set with the proper inclination of its axis, is carried *around* the class, which is thus made to occupy the position of the sun. The half of the globe which they see is the illuminated half, and the consequences of the inclination of the earth's axis is thus perceived far more distinctly than in the diagram usually employed to illustrate this point. But it is desirable to give them still more precise ideas upon this subject—to show them, for example, why in summer the day is longer as one proceeds from the equator towards the north pole, and the reverse in winter. This can be shown clearly by the following very simple device. In a sheet of card-board cut a circular aperture six or eight inches in diameter, according to the size of the globe used. Set the globe in the position it has in summer, that is, with its north pole inclined towards the class. Adjust the card-board to the stand of the globe in such a manner that it divides the globe perpendicularly into two hemispheres, the one towards the class being the day side and the other the night side. Now cause the globe to revolve slowly from west to east, while the pupils gather around to note the result. Let them fix their attention on two places on the globe situated on the same meridian, but in different latitudes—Ireland and Portugal, for example—and they will see that the northern-most place comes into the daylight sooner than the other, and that it remains in it longer. They may select a point in so high a latitude, that it remains in the daylight during the entire revolution. Let them not be satisfied with merely observing the fact, but let them try themselves to give an explanation of it. This is the best kind of an object lesson. They may not find it easy without assistance to put the explanation into words, but by close watching they will hardly fail to *see* it, and when once seen clearly it is not likely to be forgotten.

The fundamental facts of astronomical geography having been taught—including an explanation of varieties of climate—we will proceed to a general survey of the earth's surface, its division into seas and continents, the positions in which these lie with reference to one another, the characteristic features of different countries, the races of men and the kinds of animals which inhabit them. We shall go on voyages to various parts of the earth. At one time we will follow some of the old voyagers—Columbus, Magellan, Sir Francis Drake. We will trace out the present routes of ocean steamers. At another time we will go on a series of voyages for the purpose of gathering a menagerie of birds and animals, visiting the countries where they are found and learning something of their habits in their wild state. Again, we shall take up the subject of articles of commerce—food, clothing, etc. It will be easy to find a pretext for visiting almost every part of the earth, which we do with the globe, its miniature representative, constantly before us.

Every part of the course is illustrated by pictures—pictures of animals, of tropical vegetation, of ships, steamers, buildings, and of scenes in foreign countries. A good picture of an object, or of a locality, gives a far more vivid and correct impression of it than can possibly be conveyed by a verbal description. Our school geographies are usually well provided with this valuable material; but our collection of useful illustrations can, with a little trouble and expense, be greatly enlarged by pictures cut from illustrated papers and magazines, and conveniently mounted upon card-board. The children may also be encouraged to form geographical scrap-books for themselves.

It will be observed that thus far not a word has been said of rivers, lakes, and mountains. While working with the globe we may have occasion to explain the lines and markings which represent these, but beyond this we shall take no account of them in our preliminary course of first lessons. Our aim in this course is to give our pupils correct ideas of the earth's broader features, and of the more noteworthy peculiarities of different regions. By a constant use of the globe we will familiarize them with the forms and the comparative size of the grand divisions of the earth's surface and of their situations with respect to one another, while at the same time we give them some information as to what is the most remarkable in the inhabitants and the productions of different lands. The study of maps should be postponed until the pupil has become so familiar with the appearance of the continents and seas as delineated on the globe, that the mention of any country will recall to his mind the globe rather than the atlas. When this point has been reached, when these first impressions have become so deep as to be permanent, he is prepared to take up the study of countries in detail, beginning with his own. He has a foundation now upon which to build.

OFFICIAL DEPARTMENT.

DEPARTMENT OF PUBLIC INSTRUCTION,
HARRISBURG, JANUARY, 1885.

AT a meeting of the Board of School Directors of Ferguson township, Centre county, Pa, held September 11, 1884, a resolution was adopted introducing ————'s Readers, Grammar, Arithmetic, and ————'s Speller into the schools of that district, instead of those then in use. The resolution making the change was adopted before the election of teachers for the ensuing term, and without a meeting of the directors and teachers of the district according to the provision of 25 "section of the Act of Assembly of May 8, 1854."

A large majority of the citizens of the township objected to the change of books being made. They were advised that inasmuch as the Board of Directors had not complied with the law, their action was illegal and void; and that if proper application was made, the Courts would interfere and restrain the Board by injunction from placing the new books in the schools. A preliminary injunction was granted by Judge Mayer, and, on a motion to continue the same, a full hearing was had before Hon. Wm. M. Rockefeller, President Judge of the 8th Judicial District of Pennsylvania, whose opinion we give in full.

Motion to continue alias special injunction.

By the Court.—I have carefully read the petitions of the tax-payers and parents of pupils, and the injunction and counter-affidavits presented to the Court at the hearing of this case. There are apparently sound reasons given on both sides. On the question of the propriety of changing the books to be used in the schools of the district opinion is divided. It could hardly be expected to be otherwise. With this question the Court has very little, if anything, to do. Under the school law of 8th May, 1854, the power of directing what branches of learning shall be taught in each school, and what books shall be used, is committed to the school directors, but without any right of appeal; and, in the exercise of such discretionary power, they are responsible only to the people whose representatives they are. The courts may compel them to perform their duties, or restrain them when they transcend their powers; but they cannot interfere where they exercise their unquestionable powers unwisely. Where no irregularity, neglect of duty, or excess of authority can be shown, there is no remedy. All complaints such as, that the school directors have determined on the wrong sites for school houses, that the amount of taxes assessed are in excess of what is necessary, that they have selected or decided upon the wrong kind of books to be used, etc., are but appeals from their discretion in the exercise of clearly granted powers. No such appeal lies, for none is given by law. Wharton *et al. vs.* The School Directors of Cass Township, and O'Brien Collector, 6 Wright, 358.

The bill and affidavits in the present case show that the school directors of Furgeson township district, at a meeting held on the 11th day of September, 1884, before the election of teachers, and without a meeting of the directors and teachers, passed a resolution adopting a series of text-books known as ————'s Readers, ————'s Arithmetic, ————'s Grammar, and ————'s Speller, for use in the schools of that district. Some of the affidavits state that before the teachers were appointed some of them were consulted in relation to the books to be selected, but there is no pretence that there was a meeting of the school directors and teachers, and I am of opinion that there was no substantial compliance with the law. At the time of the meeting of the school directors, and when the decision was made, the school teachers were not present, and none had been elected for the current school year to teach in that district. By the 25th section of the act of 1854 it is enacted as follows: "Immediately after the annual election of teachers in each school district of the State, and before the opening of the schools for the ensuing term, there *shall* be a meeting of the *directors or controllers and teachers* in each district, at which meeting the directors or controllers shall select and decide upon a series of school books in the different branches to be taught during the ensuing school year, which books, and no other, shall be used in the schools of the district during said period.

By the Act of 1871 the directors are forbidden to make any change in the series of text-books more than once in three years. Purdon, 260, pl. 148.

Whether the meeting of the 11th of September, 1884, before the election of teachers, was a legal meeting for the purpose of selecting and deciding upon a series of school books, in the different branches to be taught during the ensuing school year, is the principal, and indeed the only, question to be determined in the case. I am clearly of opinion that the provisions of the Act of 1854, requiring that there *shall* be a meeting of the *directors* and *teachers after* the annual election of teachers, are mandatory, and not merely directory.

The reason why the teachers are to be present at such meeting is obvious. It is true, the directors are to select and decide, but that they are to be aided by persons having experience, practical knowledge, and acquaintance with school books is plainly implied.

The legislature has commanded how the duty is to be discharged. It is a power conferred which concerns the public as well as individuals. No one can justly say that the provisions of the law in this respect are not wise and important. I have not the time, nor is it necessary, to write an extended opinion. Suffice it to say, that the same question has been carefully considered and decided by several other judges. See case of S. P. Krickbaum *vs.* The School Directors of Benton, decided by Judge Elwell, of Columbia county, reported in the Luzerne Legal Register, vol. 13, page 66, A. L. Tilden

vs. James Mitchell *et al.*, School Directors of La Boeff township, decided by Judge Galbraith of Erie, and McNntt *vs.* The School Directors of Chartiers 22d, Pittsburg Legal Journal, page 42, decided by Judge Acheson, of Pittsburg. What has been said by these able judges, and the authorities cited in their opinions to show that the provisions of the act of 1854 are mandatory, is sufficient. The resolution of the directors of the 11th of September, 1884, was invalid. They may yet, however, in my opinion, make a selection and decide upon a series of school books at a meeting to be held according to the provisions of the act of Assembly.

The act of the 26th of May, 1871, does not, in my opinion, repeal the provisions of the 25th section of the act of 1854. There may be annual meetings under the latter act, and there may be a selection of a series of school books to be taught, but there can be no change made in the school books or series of text-books used in any school more than once in every period of three years. If for more than three years certain books have been used to teach certain branches of learning, I can see no reason why there cannot be a meeting of the school directors and teachers convened according to the provisions of the 25th section of the act of 1854, and a selection and decision made upon another series of books relating to those branches of learning. But there can be no *change* of the series of books relating to the same branch of learning more than once in every three years. I do not know that the question arises in this case, but something was said about it at the hearing, and what I have said is merely what has occurred to me in passing.

The alias preliminary injunction is continued till further order of the Court.

ITEMS FROM REPORTS.

ARMSTRONG.—Supt. Stockdill: I have visited schools every day for the last eight weeks. Many of them are doing better work than before, while a few are doing inferior work. Every time I visit the schools of new beginners, I am more thoroughly convinced that they should not begin to teach without a good normal drill on "*How to teach.*" We have some teachers who are laboring hard to do good work, but they do not know how. The result is—time wasted and bright minds dwarfed. May the day soon come, when those who do not love the work will not attempt to teach! If each one thought carefully and prayerfully upon the nature of the work required before entering upon it, many who are now attempting to teach would not be found so engaged. To develop child-mind aright is a study of the deepest importance, and yet it receives little attention from many of our teachers.

BERKS.—Supt. Keck: We held two very successful local institutes this month—the first at Landis' Store, and the other at Pleasantville. Both were attended by all the teachers and directors of those sections, and by many citizens. The district directors put up a very good schoolhouse. This finishes that township so far as buildings are concerned.

BUCKS.—Supt. Woodruff: The Bucks County *Intelligencer*, the leading paper of that county, resumes its educational column and will keep it up until next June. The paper is sent to all teachers in the county who apply for it. The County Superintendent contributes to its columns every week.

CAMBRIA.—Supt. Strayer: During my visits, I find the majority of our teachers carrying out the most improved methods of teaching as far as they are able, from their knowledge of such methods, and with the want of proper apparatus and general accommodations.

CAMERON.—Supt. Pearsall: The annual county institute was held at Emporium this month. It is mentioned by the county press, and the people generally, as having been a success in every respect; and financially, we believe it is the only Institute ever held in the county in which there was a balance on hand after paying all expenses.

CHESTER.—Supt. Harvey: Our county institute, held during the month in West Chester, was attended by all the teachers except four, of whom three gave satisfactory reasons for their absence. About forty teachers of our private schools also attended. Besides the 18,000 children receiving instruction in our 380 public schools, our six largest private schools—West Chester Normal, Lincoln University, Chester Springs S. O. S., Westtown Friends' School, Darlington Seminary, and the Martin Academy at Kennett Square—are furnishing common school and advanced instruction to some 1,200 others.

CLINTON—Supt. McCloskey: I visited twenty-two schools during the month, and completed arrangements for the county institute. In the majority of schools visited, mental arithmetic has been neglected, and in many it is not taught at all. Local Geography is taught in only a few schools. These studies I am trying to revive again. Able instructors have been engaged for the county institute.

DAUPHIN.—Supt. McNeal: Educational meetings were held during the month in Susquehanna and Middle Paxton, and a local institute at Linglestown. In the schools visited thus far, I notice a marked improvement in the work done over that performed in the same schools last year. Teachers are adopting more philosophic methods, and consequently accomplish more satisfactory results. Jackson township has taken a step in the right direction by organizing a district institute.

DELAWARE.—Supt. Stewart: Our teachers' institute was held at Media, October 20th. All the teachers were in attendance except four; three of these were absent on account of sickness, and one without excuse. New courses of study have been adopted in South Chester borough and Lower Chichester.

FRANKLIN.—Supt. Disert: The proceedings of our annual institute this year, from the opening to the close, were of unusual interest. The attendance of teachers, directors, and friends of education in general, was very large. The

necessity for institutes, and their importance as factors in the educational work of the country, are now firmly established. The instruction given and the lectures delivered were not only interesting but practical. Local institutes and lyceums are being organized in many parts of the county.

GREENE.—Supt. Herrington: Our teachers seem to be in earnest, and are trying to do the best they can. Our young teachers are very anxious to achieve success in their work. Those who have received normal training do better work when they begin than those who have not had this advantage.

JUNIATA.—Supt. Auman: The directors of Fayette township have re-seated Red Bank school-house with patent perforated desks, which give a neat and attractive appearance to the room. The same kind of furniture has been put into the new brick school-house at Reed's, which is a first-class building, and the only brick school-house in Tuscarora township. A public library has been started in Mifflintown, for the purpose of introducing a better class of reading matter in the community. It is hoped that the citizens will appreciate an effort of this kind.

LANCASTER.—Supt. Brecht: During the month we held one of our largest and most successful institutes. The enrollment exceeded 700, and the attendance of teachers upon the different sessions was regular and full. Among the new school-houses of the past summer, are two beautiful and complete brick buildings erected in Rapho township. These are model structures in design and comfort for rural schools, and are the first in the county heated by steam. Before building, the school-board made trips to various places, to inspect modern school buildings, and, as a result of their enterprising spirit, they have two as complete and well-furnished houses as can be found anywhere. On the 22d of the month they were appropriately dedicated to their grand mission by the patrons and official friends of our schools. The visits of the month disclose great skill and better results in school work. Another encouraging feature is the fact that every teacher, whom we met, is a reader of some educational journal.

LEHIGH.—Supt. Knauss: Three local institutes were held during the month. All were well-attended and were a decided success. The first one was held at Catasauqua, and was especially intended for teachers and directors connected with graded schools.

LYCOMING.—Supt. Riddell: Schools are now all in operation and doing well. For the first time in a number of years we have a surplus of teachers. As a consequence it has been possible to raise the standard of qualifications, thus keeping out many who had hitherto been licensed as a necessity. Our teachers are active and enthusiastic in their work, and taking every available means of qualifying themselves for their profession.

MCKEAN.—Supt. Campbell: Liberty has built two new school-houses, and Annin one; in the latter patent furniture was placed. Annin also advanced the wages, and the teachers now board themselves. This ends the "boarding around" system in McKean.

NORTHAMPTON.—Supt. Werner: The county institute held at Easton, during the month, was a success. The attendance, during the entire week, was better than at any previous institute in this county. On the 29th, we held a joint local institute of Lehigh and Northampton at Rittersville. The Superintendents of the two counties, and those of Allentown and Bethlehem, were present. Attendance was such as gives evidence of much interest in education.

NORTHUMBERLAND.—Supt. Wolverton: My visits have proved, generally, that effective work is doing in the county. Apparent earnestness is noticed in all the teachers whose schools I have visited. This is actual in most cases. More schools are needed for our increasing population.

POTTER.—Supt. Buckbee: Two new graded schools have been opened this autumn—one at Pike Mills, the other at Harrison Valley. The house at Harrison Valley is new, and altogether the finest in the county. Two local institutes, and a meeting of the County Teachers' Association, are arranged for December.

SCHUYLKILL.—Supt. Weiss: New Ringgold has supplied its schools with Mitchell's large outline maps, map of Pennsylvania, and Appleton's primary reading charts; Middle, Schuylkill, Independent and Church districts with Appleton's primary reading charts; and West Brunswick and McKeansburg, with Mitchell's outline maps. Auburn has organized another graded school. Girardville has raised the salaries of all its teachers, a very commendable act. East Mahanoy is building a new school-house and will organize another school in January. Delano has furnished another room with patent desks, and organized another school, West Mahanoy is constructing a new building with three rooms. Port Clinton has enlarged and remodeled the high school, purchased a 12-inch Holbrook globe and a set of reading charts, and raised salary of their principal. West Penn has built a fine school-house, well-furnished with patent desks, and slate backboard. Tremont borough has furnished a primary room with patent desks, purchased one set of Mitchell's large outline maps, and supplied the scholars of grammar and intermediate grades with Hooker's Child's Book of Nature, for supplementary reading and teaching the elements of science. East Brunswick has built a new school-house and furnished it with patent desks. Porter is building two new two-story buildings, and as soon as completed will organize another graded school.

SNYDER.—Supt. Dill: The schools of this county are in a prosperous condition. Directors are taking a deeper interest than usual, and parents are visiting the schools much more generally than heretofore.

SULLIVAN.—Supt. Little: The directors of Davidson have erected, at Sonestown, a neat and substantial school-house of two rooms. It is two stories high, with arched ceiling in the upper room, and it is located on the most beautiful site in the county—surrounded and over-

arched by elms, maples, and buttonwoods of native growth.

SUSQUEHANNA.—Supt. James: Forest Lake township has built a new school-house, furnishing it with patent seats. About fifty of the teachers have attended Fall terms of school. The graded schools at Montrose and Springville have added one each to their corps of teachers. Report cards are being used by a large number of teachers securing thereby an increased interest on the part of patrons.

TIOGA.—Supt. Cass: Most of our schools are in session. A few have no teachers as yet. Quite a number of our licensed teachers are attending school, thus making it necessary to hold some special examinations in order to fill the schools. We have just held one of our best county institutes. The work done was very practical and gave much aid to the teachers. Never was the attendance better on the part of teachers, or more interest taken. We are sorry to say that some teachers lack the zeal and earnestness in their profession which should prompt them to attend these meetings.

UNION.—Supt. Johnson: Our schools are now (November) all in operation, excepting those of Laurelton, where the unfinished condition of the house is the cause of the delay. We have had one failure thus far among our teachers. Upon the whole, however, I am able to report the schools in good working order.

WAYNE.—Supt. Kennedy: The institute was held at Honesdale during the latter part of the month. The interest manifested by those in attendance has never been surpassed here. Much enthusiasm was aroused by the meetings among teachers and friends of education, and this was kept up until the closing session on Saturday. Notwithstanding that Saturday is an "off day" for school work, more than 200 teachers were present at the last session. I trust that good results will spring from the work done at these sessions. Especially do I believe that map-drawing, and drawing in general, will be more extensively taught than heretofore. Primary reading was taught in class drill in a very practical manner, as were also map-drawing and U. S. History. We feel more and more impressed with the importance of our work, and trust that we are better fitted for it than ever before; entering upon it again with renewed zeal and enthusiasm. Thirty-one directors were present. We thank them for their interest and support; but regret that we could not see every director in the county present. A letter from ex-Superintendent Larrabee, addressed to the teachers of Wayne county, was read and elicited many expressions of grateful regard. Prof. W. G. Trine, who for many years has had charge of the Seeleyville schools, recently accepted the principalship of the schools of Jermyn, Lackawanna county.

WYOMING.—Supt. Keeler: One new school building has been erected in Westmoreland township. The Dewitt school, Miller Hill school, and Falls school in Falls township, have been supplied with improved furniture. The Lymanville, Indiana, school board has repaired and repainted the district school-house, so that it presents a fine appearance. Exeter and Northumberland townships have increased the salaries of their teachers, and abolished the "boarding around" system.

BETHLEHEM.—Supt. Desh: On November 3d, the high school celebrated the anniversary of Wm. C. Bryant's birthday. The exercises consisted of biographical sketches written and read by the pupils, appropriate recitations from his writings, interspersed with songs by the school. The exercises were very much appreciated by the large audience.

BRISTOL.—Supt. Booz: The directors have purchased one of Rupert's Planiscopes for the schools. Our institute (district) is attended by all the teachers and several directors. Much interest is taken in the subjects discussed. We hope to make them of practical value.

COLUMBIA.—Supt. Ames: Our school board has just completed one of the finest four-roomed school buildings in the county. It is of the Quuen Anne style of architecture, and, on the outside, presents a very fine appearance, while the interior arrangements for heating, ventilation, and light, are as near perfection as present scientific knowledge will permit. The furniture is of the most approved modern pattern. The blackboards are of slate, and the toilet and cloak-rooms are supplied with every convenience. The grounds are covered with a concrete pavement at a cost of $1,000, and enclosed with an iron fence costing $450. The entire cost of the building, grounds, etc., is about $14,000. The Board has also expended in the renovation of the exterior of Washington Institute, occupied by the High and Grammar schools, about $900. We are, therefore, ready for congratulations on the improvements we have made in our school accommodations during the past year.

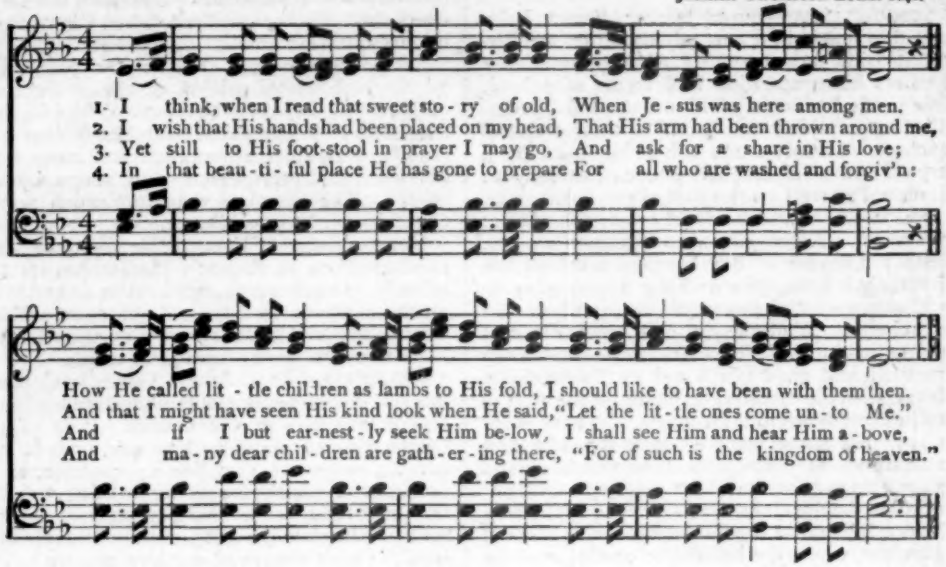
HAZLETON.—Supt. Harmon: The educational facilities of our borough have been greatly increased by the establishment of a private school under the efficient management of Prof. Kendall, a graduate of Harvard University. Inasmuch as the instruction in our High School embraces only the English branches and the sciences, a school providing for instruction in the languages became a necessity for those who desire to take a collegiate course. We are glad to report that the school is in a flourishing condition.

SHENANDOAH.—Supt. Freeman: During the month 788 pupils were enrolled in the five primary schools of the first grade. In these five schools the half-day system prevails; and in four of them there are assistant teachers. This plan is not economical, nor satisfactory, but under the present circumstances, it is the best we can do. There is a great need of new school-houses. The Board will probably tear down the old building on Lloyd street, which contains only six rooms, and erect in its place a twelve-room building.

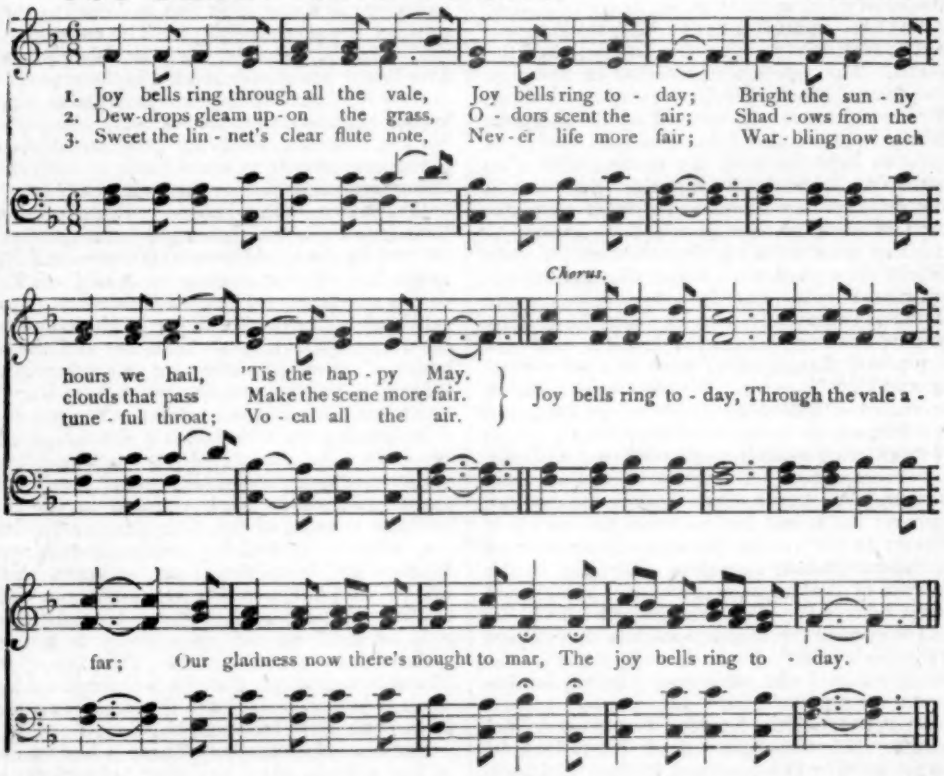
YORK.—Supt. Shelley: There is less truancy in our schools than has ever before been reported. The term reviews for three months show progress. The institute and grade meetings evince an increasing interest of teachers in their work.

THAT SWEET STORY OF OLD.

GREEK MELODY.
JEMIMA THOMPSON-LUKE. 1841.


1. I think, when I read that sweet sto - ry of old, When Je - sus was here among men.
2. I wish that His hands had been placed on my head, That His arm had been thrown around me,
3. Yet still to His foot-stool in prayer I may go, And ask for a share in His love;
4. In that beau - ti - ful place He has gone to prepare For all who are washed and forgiv'n:
How He called lit - tle children as lambs to His fold, I should like to have been with them then.
And that I might have seen His kind look when He said, "Let the lit - tle ones come un - to Me."
And if I but ear-nest - ly seek Him be-low, I shall see Him and hear Him a - bove,
And ma - ny dear chil - dren are gath - er - ing there, "For of such is the kingdom of heaven."

JOY BELLS RING TO-DAY.

SCOTCH AIR.

1. Joy bells ring through all the vale, Joy bells ring to - day; Bright the sun - ny
2. Dew-drops gleam up - on the grass, O - dors scent the air; Shad - ows from the
3. Sweet the lin - net's clear flute note, Nev - er life more fair; War - bling now each
Chorus.
hours we hail, 'Tis the hap - py May.
clouds that pass Make the scene more fair.
tune - ful throat; Vo - cal all the air.
Joy bells ring to - day, Through the vale a -
far; Our gladness now there's nought to mar, The joy bells ring to - day.

Loiter we in childhood's dream,
Fairy realms abound;
Linger we beside the stream,
Glory all around.—*Cho.*

Dreaming o'er our happy lot,
Heav'n ne'er seemed so near;
Would you find Earth's favored spot.
Seek it, wand'rer, here.

Mem'ry bells these sounds shall be,
Tones that ne'er depart;
Mem'ry bells for thee and me,—
We listen with the heart.—*Cho.*

Sing the Chorus to 2d, 4th and 6th Verses only.